

**TOWN OF MILLBURY
APPLICATION FOR SITE PLAN REVIEW**

APPLICANT:

NAME Elite Home Builders, LLC
STREET P.O. Box 1205 CITY/TOWN Westborough
STATE MA ZIP 01581 TELEPHONE (508) 560-9440

NAME OF PROPERTY OWNER (if different from Applicant) _____

Deed recorded in the Worcester District Registry of Deeds Book 64812 Page 312

SITE INFORMATION:

STREET AND NUMBER 19 Canal Street
ZONING DISTRICT B-1 ASSESSOR'S MAP/LOT #(S) Map 45 Parcel 207A
LOT SIZE 2.76 Ac. FRONTAGE 119.84
CURRENT USE Vacant

PROJECT PLAN INFORMATION:

PLAN TITLE Site Development Plan for 19 Canal Street
PREPARED BY (name/address of PE/Architect) J.M. Grenier Associates, Inc.
325 Donald Lynch Boulevard Suite 100 Marlborough, MA 01752
DATES 4/9/21

USES FOR WHICH SITE PLAN REVIEW PERMIT IS SOUGHT (refer to the Zoning Bylaw – Use Regulation Table):

Multifamily dwellings

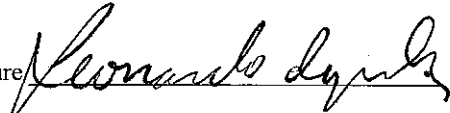
CITE ALL APPROPRIATE SECTIONS OF THE ZONING BYLAW WHICH PERTAIN TO THIS APPLICATION; USE AND SITE: _____

Section 12.41(b), 12.41(c), 14.11(a), 25.21, 25.3, 32.8

TO THE MILLBURY PLANNING BOARD:

The undersigned, being the Applicant named above, hereby applies for Site Plan Review to be granted by the Planning Board and certifies that, to the best of applicant's knowledge and belief, the information contained herein is correct and complete.

Applicant's Signature



Property Owner's Signature (if not Applicant) _____

**TOWN OF MILLBURY
APPLICATION FOR SPECIAL PERMIT**

APPLICANT:

NAME Elite Home Builders, LLC

STREET P.O. Box 1205 CITY/TOWN Westborough

STATE MA ZIP 01581 TELEPHONE (508) 560-9440

NAME OF PROPERTY OWNER (if different from Applicant) _____

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SITE INFORMATION:

STREET AND NUMBER 19 Canal Street

ZONING DISTRICT B-I ASSESSOR'S MAP/LOT #(S) Map 45 Parcel 207A

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DATES 4/9/21

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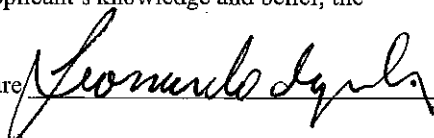
Multifamily dwellings, Stormwater Special Permit

CITE ALL APPROPRIATE SECTIONS OF THE ZONING BYLAW WHICH PERTAIN TO THIS APPLICATION; USE AND SITE: _____

Section 12.41(b), 12.41(c), 14.11(a), 25.21 25.3, 32.8

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Applicant's Signature 

Property Owner's Signature (if not Applicant) _____

**TOWN OF MILLBURY
APPLICATION FOR STORMWATER PERMIT**

APPLICANT:

NAME Elite Home Builders, LLC

STREET P.O. Box 1205 CITY/TOWN Westborough

STATE MA ZIP 01581 TELEPHONE (508) 560-9440

NAME OF PROPERTY OWNER (if different from Applicant) _____

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SITE INFORMATION:

STREET AND NUMBER 19 Canal Street

ZONING DISTRICT B-1 ASSESSOR'S MAP/LOT #(S) Map 45 Parcel 207A

LOT SIZE 2.76 Ac. FRONTAGE 119.84

CURRENT USE Vacant

PROJECT PLAN INFORMATION:

PLAN TITLE Site Development Plan for 19 Canal Street

PREPARED BY (name/address of PE/Architect) J.M. Grenier Associates Inc.
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DATES 4/9/21

USES FOR WHICH SPECIAL PERMIT IS SOUGHT

Stormwater Special Permit

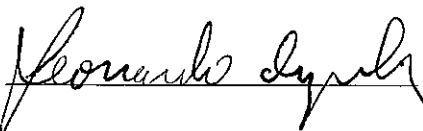
CITE ALL APPROPRIATE SECTIONS OF THE GENERAL BYLAW WHICH PERTAIN TO THIS APPLICATION; USE AND SITE: _____

Section 12.41(b), 12.41(c), 14.11(a), 25.21, 25.3, 32.8

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Applicant's Signature



Property Owner's Signature (if not Applicant)

APPLICATION REVIEW

I, LEONARDO DASILVA hereby request that my application for Site Development Plan for 19 Canal Street

be reviewed by the Millbury Planning Department whenever possible. I understand that I will be billed for review of said application at an hourly rate determined by the Town Treasurer for Planning and Secretarial support. Payments to the Town of Millbury, will be in accordance with Article 1, Section 14.6, 14.7 and 14.8 of the Town's Zoning Bylaws, and in accordance with the Town's Rules & Regulations Governing the Subdivision of Land.

Date: 4-8-21 Signature: Leonardo Dasilva

I, LEONARDO DASILVA hereby request that my application for Site Development Plan for 19 Canal Street

be reviewed by consultant(s) at my expense on behalf of the Town of Millbury Planning Board. I understand that the Planning Board shall hire the consultant of their choice in accordance with Section 53G, G.L. Chapter 44. Payments to the Town of Millbury will be in accordance with Article 1, Section 14.6, 14.7 and 14.8 of the Town's Zoning Bylaws, and in accordance with the Town's Rules & Regulations Governing the Subdivision of Land.

Date: 4-8-21 Signature: Leonardo Dasilva


**TOWN OF MILLBURY, MASSACHUSETTS
FORM E**

CERTIFIED LIST OF ABUTTERS

To the Town of Millbury Planning Board:

The undersigned being an applicant for approval of a Special Permit and/or Definitive Plan of a Subdivision entitled: Site Development Plan for 19 Canal Street

requests the names and addresses of each abutter within a 300 foot radius of said property.

Applicant's Signature: 
Mailing Address: P.O. Box 1205 Westborough, MA 01581
Owner of Property: Elite Home Builders, LLC
Property Address: 19 Canal Street
Assessor's Map #: 45
Parcel #: 207A
Date of Public Hearing: _____

To the Town of Millbury Planning Board:

This is to certify that at the time of the last assessment for taxation made by the Town of Millbury, the names and addresses of the parties assessed as adjoining owners to the parcel of land shown above, where as above written, except as follows:

Assessor's Signature: _____
Date: _____

CHECKLIST
Millbury Planning Board
Submission of Site Plan Review

Plan Name: Site Development Plan for 19 Canal Street

Property Address: 19 Canal Street Assessor's Map 45, Lot 207A

Applicant's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
(If the applicant is not the owner, a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest shall be submitted)

Owner's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
325 Donald Lynch Blvd Suite 100

Engineering Firm: J.M. Grenier Associates, Inc. Address: Marlborough, MA Tel. No. (508) 845-2500

Submission Checklist:

- 1) Submission Fee of \$ 3,450 and Technical Review Fee of \$ 6,000 made payable to the Town of Millbury
- 2) One original Site Plan (at a scale of 1" = 20'), ten (10) full size copies, and seven (7) 11" x 17" copies thereof showing:
 - a. Names, addresses and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan. If the applicant is not the owner, submit a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest.
 - b. Identification of the plan by name of the project, property address, assessor's map and lot number, the date, datum NAD83 and NAVD 88, north arrow, names of abutters and scale.
 - c. Natural features including watercourses, water bodies, wetlands, soil properties, and any other environmental features of the landscape that are important to the site design process.
 - d. Location of all existing and proposed easements, rights-of-way and other encumbrances.
 - e. All floodplain information, including the contours of the one-hundred (100) year flood elevation based upon the most recent Flood Insurance Rate Map for Millbury, or as calculated by a professional land surveyor for unmapped areas.
 - f. Location, width, curbing, and paving of all existing and proposed streets, rights-of-way, easements, alleys, driveways, sidewalks, and other public ways.
 - g. Location of all pavement markings.
 - h. Location of all existing and proposed on-site snow storage areas.
 - i. Location and name of all streets and indicate whether the street is a public or private way.
 - j. Lot lines with dimensions.
 - k. Zoning district lines.
 - l. Five (5) signature lines for the Planning Board approval.
 - m. Existing and proposed topography contour lines at one (1) foot intervals.
 - n. Information on the location, size, type and number of existing and proposed landscaping features.
 - o. Information on the location, size and capacity of existing and proposed on-site and abutting utilities (water, sewer, drainage, electrical, cable, etc.)
 - p. The location, type and intensity of lighting, the location and dimensions of all signage and any site amenities, the location screening of refuse containers.
 - q. The location, dimensions of all existing and proposed buildings and uses on-site and on abutting properties.
 - r. Elevation and façade treatment plans of all proposed buildings.
 - s. Information on the location, size, and type of parking, loading, storage and service areas.
 - t. Zoning and other applicable setback distances, and zoning parking calculations
 - u. At least three property boundary marker locations, remotely separated, indicated with Mass Grid Plane Coordinates
- 3) A landscape plan at the same scale as the site plan, showing the limits of work, existing tree lines and all proposed landscape features and improvements including planting areas with size and type of stock for each shrub or tree.
- 4) An isometric line drawing (projection) at the same scale as the site plan, showing the entire project and its relation to existing areas, building and roads for a distance of one hundred feet from the project boundaries.
- 5) A locus plan at a scale of one inch equals 100 feet (1" = 100') showing the entire project and its relation to existing areas, buildings and roads for a distance of one hundred (100) feet from the project boundary or such other distances as may be approved or required by the Planning Board.
- 6) Building elevation plans at a scale of one-quarter inch equals one foot (1/4" = 1') or one-half inch equals one foot (1/2" = 1') showing all elevations of all proposed buildings and structures and indicating the type and color of materials to be used on all facades.
- 7) Development impact statements which shall describe potential impacts on the proposed development, compare them to the impacts of uses which are or can be made of the site without a requirement of site plan review, identify all significant positive or adverse impacts, and propose an acceptable program to prevent or mitigate adverse impacts. The development impact statement shall include:
 - a. Traffic Impact Assessment
 - b. Environmental Impact Assessment

- c. Fiscal Impact Statement
- d. Historic Impact

Note: The Planning Board may waive any of the above listed requirements if it believes that said requirement is not necessary based on the size and scope of the project. The applicant may petition the Planning Board prior to making a formal application to request notification as to which sections (s) of the site plan review by-law requirements are necessary. The Planning Board will then notify the applicant within thirty (30) days as to which sections relate to the proposed project based on the size and scope of the project.

The Millbury Planning Board has accepted the submission of the above Site Plan. This document certifies that, as currently submitted, the Site Plan meets the minimum submission guidelines as set forth by the Town of Millbury. This document certifies that the Site Plan is officially accepted for Planning Board review and consideration. It does not constitute approval of the Site Plan.

Town Planner/Planning Board Clerk Signature _____ Date _____

CHECKLIST
Millbury Planning Board
Submission of Special Permit

Plan Name: Site Development Plan for 19 Canal Street

Property Address: 19 Canal Street Assessor's Map 45, Lot 207A

Applicant's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
(If the applicant is not the owner, a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest shall be submitted)

Owner's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
325 Donald Lynch Blvd Suite 100

Engineering Firm: J.M. Grenier Associates, Inc. Address: Marlborough, MA Tel. No. (508) 845-2500

Submission Checklist:

- 1) Submission Fee of \$ 3,450 and Technical Review Fee of \$ 6,000 made payable to the Town of Millbury
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 - a. Names, addresses and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan. If the applicant is not the owner, submit a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest.
 - b. Identification of the plan by name of the project, property address, assessor's map and lot number, the date, datum NAD83 and NAVD 88, north arrow, names of abutters and scale.
 - c. Natural features including watercourses, water bodies, wetlands, soil properties, and any other environmental features of the landscape that are important to the site design process.
 - d. Location of all existing and proposed easements, rights-of-way and other encumbrances.
 - e. All floodplain information, including the contours of the one-hundred (100) year flood elevation based upon the most recent Flood Insurance Rate Map for Millbury, or as calculated by a professional land surveyor for unmapped areas.
 - f. Location, width, curbing, and paving of all existing and proposed streets, rights-of-way, easements, alleys, driveways, sidewalks, and other public ways.
 - g. Location of all pavement markings.
 - h. Location of all existing and proposed on-site snow storage areas.
 - i. Location and name of all streets and indicate whether the street is a public or private way.
 - j. Lot lines with dimensions.
 - k. Zoning district lines.
 - l. Five (5) signature lines for the Planning Board approval.
 - m. Existing and proposed topography contour lines at one (1) foot intervals.
 - n. Information on the location, size, type and number of existing and proposed landscaping features.
 - o. Information on the location, size and capacity of existing and proposed on-site and abutting utilities (water, sewer, drainage, electrical, cable, etc.)
 - p. The location, type and intensity of lighting, the location and dimensions of all signage and any site amenities, the location screening of refuse containers.
 - q. The location, dimensions of all existing and proposed buildings and uses on-site and on abutting properties.
 - r. Elevation and façade treatment plans of all proposed buildings.
 - s. Information on the location, size, and type of parking, loading, storage and service areas.
 - t. Zoning and other applicable setback distances, and zoning parking calculations
 - u. At least three property boundary marker locations, remotely separated, indicated with Mass Grid Plane Coordinates
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- 4) An isometric line drawing (projection) at the same scale as the site plan, showing the entire project and its relation to existing areas, building and roads for a distance of one hundred feet from the project boundaries.
- 5) A locus plan at a scale of one inch equals 100 feet (1" = 100') showing the entire project and its relation to existing areas, buildings and roads for a distance of one hundred (100) feet from the project boundary or such other distances as may be approved or required by the Planning Board.
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 - a. Traffic Impact Assessment
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- c. Fiscal Impact Statement
- d. Historic Impact

Note: The Planning Board may waive any of the above listed requirements if it believes that said requirement is not necessary based on the size and scope of the project. The applicant may petition the Planning Board prior to making a formal application to request notification as to which sections (s) of the site plan review by-law requirements are necessary. The Planning Board will then notify the applicant within thirty (30) days as to which sections relate to the proposed project based on the size and scope of the project.

The Millbury Planning Board has accepted the submission of the above Site Plan. This document certifies that, as currently submitted, the Site Plan meets the minimum submission guidelines as set forth by the Town of Millbury. This document certifies that the Site Plan is officially accepted for Planning Board review and consideration. It does not constitute approval of the Site Plan.

Town Planner/Planning Board Clerk Signature _____ Date _____

CHECKLIST
Millbury Planning Board
Submission of Stormwater Plan Review

Plan Name: Site Development Plan for 19 Canal Street

Property Address: 19 Canal Street Assessor's Map 45, Lot 207A

Applicant's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
(If the applicant is not the owner, a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest shall be submitted)

Owner's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
325 Donald Lynch Blvd Suite 100

Engineering Firm: J.M. Grenier Associates Inc. Address: Marlborough, MA Tel. No. (508) 845-2500

Submission Checklist:

- 1) Submission Fee of \$ 200 and Technical Review Fee of \$ _____ made payable to the Town of Millbury
- 2) One original Stormwater Management Plan and ten (10) copies thereof showing:
 - a) Names, addresses and telephone numbers of the owner, applicant and person(s) or firm(s) preparing the plan
 - b) Name of project, property address, assessor's map and lot number, the date, north arrow, names of abutters and scale
 - c) A locus map
 - d) The existing zoning, and land use at the site
 - e) The proposed land use
 - f) The location(s) of existing and proposed easements
 - g) The location of existing and proposed utilities
 - h) The site's existing & proposed topography with contours at one (1) foot intervals
 - i) The existing site hydrology
 - j) A description and delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows
 - k) A delineation of 100 year flood plains, if applicable
 - l) Estimated seasonal high groundwater elevation (November to April) in areas to be used for stormwater retention, detention or infiltration
 - m) The existing and proposed vegetation and ground surfaces with runoff coefficient for each
 - n) A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths
 - o) A description and drawings of all components of the proposed drainage system, including:
 - Locations, cross sections and profiles of all brooks, streams, drainage swales and their method of stabilization
 - All measures for the detention, retention or infiltration of water
 - All measures for the protection of water quality
 - The structural details for all components of the proposed drainage systems and stormwater management facilities
 - Notes on drawings specifying materials to be used, construction specifications and typicals
 - Expected hydrology with supporting calculations
 - p) Proposed improvements including locations of buildings or other structures, impervious surfaces, and drainage facilities if applicable
 - q) Timing schedules and sequence of development including clearing, stripping, rough grading, construction, final grading and vegetative stabilization
 - r) A maintenance schedule for the period of construction
- 3) One original Operation and Maintenance Plan and ten (10) copies thereof showing:
 - a) The names(s) of the owners(s) for all components of the system
 - b) Maintenance agreements that specify:
 - The names and addresses of the person(s) responsible for operation and maintenance
 - The person(s) responsible for financing maintenance and emergency repairs
 - A maintenance schedule for all drainage structures, including swales and ponds
 - A list of easements with the purpose and location of each
 - The signature(s) of the owner(s)

Note: The Planning Board may waive any of the above listed requirements if it believes that said requirement is not necessary based on the size and scope of the project. The applicant may petition the Planning Board prior to making a formal application to request notification as to which sections (s) of the stormwater plan review by-law requirements are necessary. The Planning Board will then notify the applicant within thirty (30) days as to which sections relate to the proposed project based on the size and scope of the project.

The Millbury Planning Board has accepted the submission of the above Stormwater Plan. This document certifies that, as currently submitted, the Stormwater Plan meets the minimum submission guidelines as set forth by the Town of Millbury. This document certifies that the Stormwater Plan is officially accepted for Planning Board review and consideration. It does not constitute approval of the Stormwater Plan.

Town Planner/Planning Board Clerk Signature _____ Date _____



TOWN OF MILLBURY

MUNICIPAL OFFICE BUILDING • 127 ELM STREET • MILLBURY, MA 01527-2632 • TEL. 508 / 865-0438 • FAX. 508 / 865-0857

Department of
Building & Inspections
Paul F. Stringham
Inspector of Buildings

DATE: 11-18-2020
To: James Almonte c/o Land Design Collaborative
From: Paul F. Stringham, Inspector of Buildings-Zoning Enforcement Officer
RE: Proposed Canal Street Apartments ZDET 20-17 Request
CC: Laurie Connors, file

Dear Mr. Almonte,

I have inspected the site of this proposed development project and have reviewed the concept site plan and elevations furnish with your request.

The property is located within Business 1 Zoning District with access on Canal Street located on Assessors Map 45 Lot 207, currently being identified as 0 Canal St. Residential uses containing 3 or more units in this district are classified as being a multi-family use. Multifamily uses in this B-1 district will require a Special Use Permit granted by the Planning Board in accordance with Section 25.21 and will also require a Site Plan Review under Section 12.4 also reviewed by the Planning Board

Per our phone conversation the desired roof framing design for this project is a gable pitched roof design, under Millbury Zoning Bylaws Section 25.3, maximum allowable building height is 30- ft for residential uses and 40-feet for non-residential uses. The actual height is determined by the Mean Average Height under the ICC Model Building Code method. As per you elevation plan submitted the proposed building height as shown as 39' - 1 1/8";- in excess of 30-ft for residential use but under the 40-foot for other uses. The property is relatively flat but final site development may cause some topography changes.

A building permit cannot be issued at this for this particular design concept because it would violate Section 25.3, unless you seek zoning relief by petitioning for a Dimensional Height Variance from provisions of Section 25.3 and if approved must be recorded at the Registry of Deeds. If you file you may want to consider filing for additional height to handle any variations in elevation that arises during construction process.

Please attach this letter to your application for relief if you desire to Appeal this review. Application forms are available from the Town Clerk's Office.

Paul F. Stringham

**TOWN OF MILLBURY
APPLICATION FOR SITE PLAN REVIEW**

APPLICANT:

NAME Elite Home Builders, LLC

STREET P.O. Box 1205 CITY/TOWN Westborough

STATE MA ZIP 01581 TELEPHONE (508) 560-9440

NAME OF PROPERTY OWNER (if different from Applicant) _____

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STREET AND NUMBER 19 Canal Street

ZONING DISTRICT B-1 ASSESSOR'S MAP/LOT #(S) Map 45 Parcel 207A

LOT SIZE 2.76 Ac. FRONTAGE 119.84

CURRENT USE Vacant

PROJECT PLAN INFORMATION:

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DATES 4/9/21

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Multifamily dwellings

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**TOWN OF MILLBURY
APPLICATION FOR SPECIAL PERMIT**

APPLICANT:

NAME Elite Home Builders, LLC

STREET P.O. Box 1205 CITY/TOWN Westborough

STATE MA ZIP 01581 TELEPHONE (508) 560-9440

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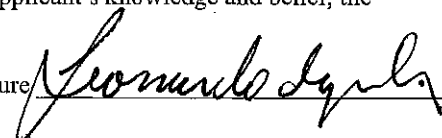
Multifamily dwellings, Stormwater Special Permit

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Applicant's Signature 

Property Owner's Signature (if not Applicant) _____

**TOWN OF MILLBURY
APPLICATION FOR STORMWATER PERMIT**

APPLICANT:

NAME Elite Home Builders, LLC

STREET P.O. Box 1205 CITY/TOWN Westborough

STATE MA ZIP 01581 TELEPHONE (508) 560-9440

NAME OF PROPERTY OWNER (if different from Applicant) _____

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DATES 4/9/21

USES FOR WHICH SPECIAL PERMIT IS SOUGHT

Stormwater Special Permit

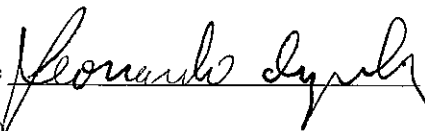
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APPLICATION REVIEW

I, LEONARDO DASILVA hereby request that my application
for Site Development Plan for 19 Canal Street

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Date: 4-8-21 Signature: Leonardo D Silva

I, LEONARDO DASILVA hereby request that my application
for Site Development Plan for 19 Canal Street

be reviewed by consultant(s) at my expense on behalf of the Town of Millbury Planning Board. I understand that the Planning Board shall hire the consultant of their choice in accordance with Section 53G, G.L. Chapter 44. Payments to the Town of Millbury will be in accordance with Article 1, Section 14.6, 14.7 and 14.8 of the Town's Zoning Bylaws, and in accordance with the Town's Rules & Regulations Governing the Subdivision of Land.

Date: 4-8-21 Signature: Leonardo D Silva


**TOWN OF MILLBURY, MASSACHUSETTS
FORM E**

CERTIFIED LIST OF ABUTTERS

To the Town of Millbury Planning Board:

The undersigned being an applicant for approval of a Special Permit and/or Definitive Plan of a Subdivision entitled: Site Development Plan for 19 Canal Street

requests the names and addresses of each abutter within a 300 foot radius of said property.

Applicant's Signature: 
Mailing Address: P.O. Box 1205 Westborough, MA 01581
Owner of Property: Elite Home Builders, LLC
Property Address: 19 Canal Street
Assessor's Map #: 45
Parcel #: 207A
Date of Public Hearing: _____

To the Town of Millbury Planning Board:

This is to certify that at the time of the last assessment for taxation made by the Town of Millbury, the names and addresses of the parties assessed as adjoining owners to the parcel of land shown above, where as above written, except as follows:

Assessor's Signature: _____
Date: _____

CHECKLIST
Millbury Planning Board
Submission of Site Plan Review

Plan Name: Site Development Plan for 19 Canal Street

Property Address: 19 Canal Street Assessor's Map 45, Lot 207A

Applicant's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
(If the applicant is not the owner, a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest shall be submitted)

Owner's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
325 Donald Lynch Blvd Suite 100

Engineering Firm: J.M. Grenier Associates, Inc. Address: Marlborough, MA Tel. No. (508) 845-2500

Submission Checklist:

- 1) Submission Fee of \$ 3,450 and Technical Review Fee of \$ 6,000 made payable to the Town of Millbury
- 2) One original Site Plan (at a scale of 1" = 20'), ten (10) full size copies, and seven (7) 11" x 17" copies thereof showing:
 - a. Names, addresses and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan. If the applicant is not the owner, submit a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest.
 - b. Identification of the plan by name of the project, property address, assessor's map and lot number, the date, datum NAD83 and NAVD 88, north arrow, names of abutters and scale.
 - c. Natural features including watercourses, water bodies, wetlands, soil properties, and any other environmental features of the landscape that are important to the site design process.
 - d. Location of all existing and proposed easements, rights-of-way and other encumbrances.
 - e. All floodplain information, including the contours of the one-hundred (100) year flood elevation based upon the most recent Flood Insurance Rate Map for Millbury, or as calculated by a professional land surveyor for unmapped areas.
 - f. Location, width, curbing, and paving of all existing and proposed streets, rights-of-way, easements, alleys, driveways, sidewalks, and other public ways.
 - g. Location of all pavement markings.
 - h. Location of all existing and proposed on-site snow storage areas.
 - i. Location and name of all streets and indicate whether the street is a public or private way.
 - j. Lot lines with dimensions.
 - k. Zoning district lines.
 - l. Five (5) signature lines for the Planning Board approval.
 - m. Existing and proposed topography contour lines at one (1) foot intervals.
 - n. Information on the location, size, type and number of existing and proposed landscaping features.
 - o. Information on the location, size and capacity of existing and proposed on-site and abutting utilities (water, sewer, drainage, electrical, cable, etc.)
 - p. The location, type and intensity of lighting, the location and dimensions of all signage and any site amenities, the location screening of refuse containers.
 - q. The location, dimensions of all existing and proposed buildings and uses on-site and on abutting properties.
 - r. Elevation and façade treatment plans of all proposed buildings.
 - s. Information on the location, size, and type of parking, loading, storage and service areas.
 - t. Zoning and other applicable setback distances, and zoning parking calculations
 - u. At least three property boundary marker locations, remotely separated, indicated with Mass Grid Plane Coordinates
- 3) A landscape plan at the same scale as the site plan, showing the limits of work, existing tree lines and all proposed landscape features and improvements including planting areas with size and type of stock for each shrub or tree.
- 4) An isometric line drawing (projection) at the same scale as the site plan, showing the entire project and its relation to existing areas, building and roads for a distance of one hundred feet from the project boundaries.
- 5) A locus plan at a scale of one inch equals 100 feet (1" = 100') showing the entire project and its relation to existing areas, buildings and roads for a distance of one hundred (100) feet from the project boundary or such other distances as may be approved or required by the Planning Board.
- 6) Building elevation plans at a scale of one-quarter inch equals one foot (1/4" = 1') or one-half inch equals one foot (1/2" = 1') showing all elevations of all proposed buildings and structures and indicating the type and color of materials to be used on all facades.
- 7) Development impact statements which shall describe potential impacts on the proposed development, compare them to the impacts of uses which are or can be made of the site without a requirement of site plan review, identify all significant positive or adverse impacts, and propose an acceptable program to prevent or mitigate adverse impacts. The development impact statement shall include:
 - a. Traffic Impact Assessment
 - b. Environmental Impact Assessment

- c. Fiscal Impact Statement
- d. Historic Impact

Note: The Planning Board may waive any of the above listed requirements if it believes that said requirement is not necessary based on the size and scope of the project. The applicant may petition the Planning Board prior to making a formal application to request notification as to which sections (s) of the site plan review by-law requirements are necessary. The Planning Board will then notify the applicant within thirty (30) days as to which sections relate to the proposed project based on the size and scope of the project.

The Millbury Planning Board has accepted the submission of the above Site Plan. This document certifies that, as currently submitted, the Site Plan meets the minimum submission guidelines as set forth by the Town of Millbury. This document certifies that the Site Plan is officially accepted for Planning Board review and consideration. It does not constitute approval of the Site Plan.

Town Planner/Planning Board Clerk Signature _____ Date _____

CHECKLIST
Millbury Planning Board
Submission of Special Permit

Plan Name: Site Development Plan for 19 Canal Street

Property Address: 19 Canal Street Assessor's Map 45, Lot 207A

Applicant's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
(If the applicant is not the owner, a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest shall be submitted)

Owner's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
325 Donald Lynch Blvd Suite 100

Engineering Firm: J.M. Grenier Associates, Inc. Address: Marlborough, MA Tel. No. (508) 845-2500

Submission Checklist:

- 1) Submission Fee of \$ 3,450 and Technical Review Fee of \$ 6,000 made payable to the Town of Millbury
- 2) One original Site Plan (at a scale of 1" = 20'), ten (10) full size copies, and seven (7) 11" x 17" copies thereof showing:
 - a. Names, addresses and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan. If the applicant is not the owner, submit a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest.
 - b. Identification of the plan by name of the project, property address, assessor's map and lot number, the date, datum NAD83 and NAVD 88, north arrow, names of abutters and scale.
 - c. Natural features including watercourses, water bodies, wetlands, soil properties, and any other environmental features of the landscape that are important to the site design process.
 - d. Location of all existing and proposed easements, rights-of-way and other encumbrances.
 - e. All floodplain information, including the contours of the one-hundred (100) year flood elevation based upon the most recent Flood Insurance Rate Map for Millbury, or as calculated by a professional land surveyor for unmapped areas.
 - f. Location, width, curbing, and paving of all existing and proposed streets, rights-of-way, easements, alleys, driveways, sidewalks, and other public ways.
 - g. Location of all pavement markings.
 - h. Location of all existing and proposed on-site snow storage areas.
 - i. Location and name of all streets and indicate whether the street is a public or private way.
 - j. Lot lines with dimensions.
 - k. Zoning district lines.
 - l. Five (5) signature lines for the Planning Board approval.
 - m. Existing and proposed topography contour lines at one (1) foot intervals.
 - n. Information on the location, size, type and number of existing and proposed landscaping features.
 - o. Information on the location, size and capacity of existing and proposed on-site and abutting utilities (water, sewer, drainage, electrical, cable, etc.)
 - p. The location, type and intensity of lighting, the location and dimensions of all signage and any site amenities, the location screening of refuse containers.
 - q. The location, dimensions of all existing and proposed buildings and uses on-site and on abutting properties.
 - r. Elevation and façade treatment plans of all proposed buildings.
 - s. Information on the location, size, and type of parking, loading, storage and service areas.
 - t. Zoning and other applicable setback distances, and zoning parking calculations
 - u. At least three property boundary marker locations, remotely separated, indicated with Mass Grid Plane Coordinates
- 3) A landscape plan at the same scale as the site plan, showing the limits of work, existing tree lines and all proposed landscape features and improvements including planting areas with size and type of stock for each shrub or tree.
- 4) An isometric line drawing (projection) at the same scale as the site plan, showing the entire project and its relation to existing areas, building and roads for a distance of one hundred feet from the project boundaries.
- 5) A locus plan at a scale of one inch equals 100 feet (1" = 100') showing the entire project and its relation to existing areas, buildings and roads for a distance of one hundred (100) feet from the project boundary or such other distances as may be approved or required by the Planning Board.
- 6) Building elevation plans at a scale of one-quarter inch equals one foot (1/4" = 1') or one-half inch equals one foot (1/2" = 1') showing all elevations of all proposed buildings and structures and indicating the type and color of materials to be used on all facades.
- 7) Development impact statements which shall describe potential impacts on the proposed development, compare them to the impacts of uses which are or can be made of the site without a requirement of site plan review, identify all significant positive or adverse impacts, and propose an acceptable program to prevent or mitigate adverse impacts. The development impact statement shall include:
 - a. Traffic Impact Assessment
 - b. Environmental Impact Assessment

- c. Fiscal Impact Statement
- d. Historic Impact

Note: The Planning Board may waive any of the above listed requirements if it believes that said requirement is not necessary based on the size and scope of the project. The applicant may petition the Planning Board prior to making a formal application to request notification as to which sections (s) of the site plan review by-law requirements are necessary. The Planning Board will then notify the applicant within thirty (30) days as to which sections relate to the proposed project based on the size and scope of the project.

The Millbury Planning Board has accepted the submission of the above Site Plan. This document certifies that, as currently submitted, the Site Plan meets the minimum submission guidelines as set forth by the Town of Millbury. This document certifies that the Site Plan is officially accepted for Planning Board review and consideration. It does not constitute approval of the Site Plan.

Town Planner/Planning Board Clerk Signature _____ Date _____

CHECKLIST
Millbury Planning Board
Submission of Stormwater Plan Review

Plan Name: Site Development Plan for 19 Canal Street

Property Address: 19 Canal Street Assessor's Map 45, Lot 207A

Applicant's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
(If the applicant is not the owner, a notarized statement authorizing the applicant to act on the owner's behalf and disclosing his interest shall be submitted)

Owner's Name: Elite Home Builders, LLC Address: P.O. Box 1205 Westborough, MA Tel. No. (508) 560-9440
325 Donald Lynch Blvd Suite 100

Engineering Firm: J.M. Grenier Associates Inc. Address: Marlborough, MA Tel. No. (508) 845-2500

Submission Checklist:

- 1) Submission Fee of \$ 200 and Technical Review Fee of \$ _____ made payable to the Town of Millbury
- 2) One original Stormwater Management Plan and ten (10) copies thereof showing:
 - a) Names, addresses and telephone numbers of the owner, applicant and person(s) or firm(s) preparing the plan
 - b) Name of project, property address, assessor's map and lot number, the date, north arrow, names of abutters and scale
 - c) A locus map
 - d) The existing zoning, and land use at the site
 - e) The proposed land use
 - f) The location(s) of existing and proposed easements
 - g) The location of existing and proposed utilities
 - h) The site's existing & proposed topography with contours at one (1) foot intervals
 - i) The existing site hydrology
 - j) A description and delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows
 - k) A delineation of 100 year flood plains, if applicable
 - l) Estimated seasonal high groundwater elevation (November to April) in areas to be used for stormwater retention, detention or infiltration
 - m) The existing and proposed vegetation and ground surfaces with runoff coefficient for each
 - n) A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths
 - o) A description and drawings of all components of the proposed drainage system, including:
 - Locations, cross sections and profiles of all brooks, streams, drainage swales and their method of stabilization
 - All measures for the detention, retention or infiltration of water
 - All measures for the protection of water quality
 - The structural details for all components of the proposed drainage systems and stormwater management facilities
 - Notes on drawings specifying materials to be used, construction specifications and typicals
 - Expected hydrology with supporting calculations
 - p) Proposed improvements including locations of buildings or other structures, impervious surfaces, and drainage facilities if applicable
 - q) Timing schedules and sequence of development including clearing, stripping, rough grading, construction, final grading and vegetative stabilization
 - r) A maintenance schedule for the period of construction
- 3) One original Operation and Maintenance Plan and ten (10) copies thereof showing:
 - a) The names(s) of the owners(s) for all components of the system
 - b) Maintenance agreements that specify:
 - The names and addresses of the person(s) responsible for operation and maintenance
 - The person(s) responsible for financing maintenance and emergency repairs
 - A maintenance schedule for all drainage structures, including swales and ponds
 - A list of easements with the purpose and location of each
 - The signature(s) of the owner(s)

Note: The Planning Board may waive any of the above listed requirements if it believes that said requirement is not necessary based on the size and scope of the project. The applicant may petition the Planning Board prior to making a formal application to request notification as to which sections (s) of the stormwater plan review by-law requirements are necessary. The Planning Board will then notify the applicant within thirty (30) days as to which sections relate to the proposed project based on the size and scope of the project.

The Millbury Planning Board has accepted the submission of the above Stormwater Plan. This document certifies that, as currently submitted, the Stormwater Plan meets the minimum submission guidelines as set forth by the Town of Millbury. This document certifies that the Stormwater Plan is officially accepted for Planning Board review and consideration. It does not constitute approval of the Stormwater Plan.

Town Planner/Planning Board Clerk Signature _____ Date _____



TOWN OF MILLBURY

MUNICIPAL OFFICE BUILDING • 127 ELM STREET • MILLBURY, MA 01527-2632 • TEL. 508 / 865-0438 • FAX. 508 / 865-0857

Department of
Building & Inspections
Paul F. Stringham
Inspector of Buildings

DATE: 11-18-2020
To: James Almonte c/o Land Design Collaborative
From: Paul F. Stringham, Inspector of Buildings-Zoning Enforcement Officer
RE: Proposed Canal Street Apartments ZDET 20-17 Request
CC: Laurie Connors, file

Dear Mr. Almonte,

I have inspected the site of this proposed development project and have reviewed the concept site plan and elevations furnish with your request.

The property is located within Business 1 Zoning District with access on Canal Street located on Assessors Map 45 Lot 207, currently being identified as 0 Canal St. Residential uses containing 3 or more units in this district are classified as being a multi-family use. Multifamily uses in this B-1 district will require a Special Use Permit granted by the Planning Board in accordance with Section 25.21 and will also require a Site Plan Review under Section 12.4 also reviewed by the Planning Board

Per our phone conversation the desired roof framing design for this project is a gable pitched roof design, under Millbury Zoning Bylaws Section 25.3, maximum allowable building height is 30- ft for residential uses and 40-feet for non-residential uses. The actual height is determined by the Mean Average Height under the ICC Model Building Code method. As per you elevation plan submitted the proposed building height as shown as 39' - 1 1/8";- in excess of 30-ft for residential use but under the 40-foot for other uses. The property is relatively flat but final site development may cause some topography changes.

A building permit cannot be issued at this for this particular design concept because it would violate Section 25.3, unless you seek zoning relief by petitioning for a Dimensional Height Variance from provisions of Section 25.3 and if approved must be recorded at the Registry of Deeds. If you file you may want to consider filing for additional height to handle any variations in elevation that arises during construction process.

Please attach this letter to your application for relief if you desire to Appeal this review. Application forms are available from the Town Clerk's Office.

Paul F. Stringham

DEVELOPMENT IMPACT REPORT
19 CANAL STREET
MILLBURY, MASSACHUSETTS
April 9, 2021

Prepared for:
ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MASSACHUSETTS 01581

Prepared by:
J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MA 01752

Project Number:
G-611
Millbury, Massachusetts

J.M. GRENIER ASSOCIATES INC.

LAND PLANNING • CIVIL ENGINEERING

DEVELOPMENT IMPACT REPORT
19 Canal Street
Millbury, Massachusetts

Elite Home Builders, LLC is proposing to construct a building with 59 residential apartment units along with accessory structures for parking and operation of the property at 19 Canal Street. The development will include 45 one bedroom and 14 two bedroom units. The property contains 2.76 acres in the Business I zoning district and is currently vacant, except for an access driveway for three residential units abutting the property to the west commonly referred to as Railroad Court. The subject parcel is Assessors Map 45 Parcel 207A

NATURAL ENVIRONMENT

Land

The existing soils on site including Hinckley, a Hydrologic Group A soil and Udorthents, which do not have a classification. The Hinckley soils are located in all areas of the property except adjacent to the Town owned land to the east. Udorthents are present near the eastern property line. The property is currently primarily lawn except for some wooded area adjacent to the western and eastern property lines, along with the access driveway "Railroad Court" which services the residential units to the west. The site contains slopes ranging from 5-25%. Most of the property contains slopes of 2-5%. The steepest slopes are limited to directly adjacent to the eastern property line.

The proposed development contains slopes of generally between 2-4% in areas of building, parking and driveway areas. Sleeper slopes are present adjacent to the proposed building to accommodate the transition from first floor elevation in the front to walk out basement elevation in the back. Most site work involves fills of between 2 and 5 feet. The largest fills are adjacent to the proposed building to maintain slopes of 2% or less in this area.

The primary site limitation from soil conditions was the presence of seasonal high groundwater at a depth of 6 to 6.5 feet which impacted the design of the stormwater management system. These groundwater elevations were confirmed by soil testing witnessed by the Town's consultant, Stantec. These site limitations were overcome by raising the site elevation in the parking to provide 2 foot offset to groundwater for all infiltration system.

Erosion and sedimentation control for this project during construction will be achieved through multiple measures. Silt fence and straw wattles on the eastern and southern portions of the property will collect sediment prior to reaching offsite areas and Canal Street. Temporary construction basins will be utilized during construction to catch upgradient runoff and control sediment discharge toward offsite areas and Canal Street. Temporary basins will be sized to hold 3,600 cu.ft. for each upgradient acre. An 18 foot wide and 50 foot deep construction entrance apron will be installed at the proposed driveway entrance prior to construction to ensure sediment from vehicles leaving the site does not track onto Canal Street. Catch basins will be protected by hay bales and silt fence prior to paving to prevent sediment from entering the storm

drainage system. Soil stockpiles will be mulched if they are to remain for longer than three weeks.

Following construction, permanent methods for erosion and sedimentation control include the stormwater management system and loaming and seeding lawn areas. The proposed stormwater management system for the parking areas includes deep sump catch basins, and Stormceptors. These all function to collect any sediment discharged into the drainage system and prevent sediment collection of sediment into the infiltration chambers or the existing street drainage system in Canal Street. All other disturbed areas will either be landscaped with vegetation or loamed and seeded. All grass slopes steeper than 3:1 will be protected with environmental matting. The components of the stormwater management system will be maintained on a regular basis to ensure the stormwater system continues to function as designed.

The stormwater management system as designed reduces peak rates of runoff toward abutters to the east and the existing Canal Street storm drainage system for all storm events up to and including the 100-year storm and the recharge chambers will allow runoff to be recharged into the ground.

Air

During construction and main source of air impacts is from dust generated by construction activities, including tracking of dust by vehicles and from soil stockpiles. The Erosion & Sedimentation Control Plan includes measures that shall be taken to reduce the potential impact of airborne or windborne dust during construction. These include installation of a temporary stone construction entrance to prevent dust from being tracked offsite by vehicles, stabilization of disturbed surfaces a minimum of 21 days after construction of any portion of the site has been completed and watering of paved surfaces a minimum of once per week to prevent dust particles from becoming airborne.

Following the completion of construction, air impacts will be limited to those typically associated with residential developments, including air impacts from traffic and from activities in common areas of the development.

Water and Wetlands

This project is not expected to have any significant impact on private or public water supplies. The development is designed to recharge over 14,800 cu.ft. into the ground via the four infiltration chambers during the 100-year storm event, significantly above the 3,500 cu.ft. of recharge required under MA DEP Stormwater Management Standards. The eastern portion of the site adjacent to is considered a high yield aquifer and the remainder of the site is considered a medium yield aquifer. The amount of groundwater recharge provided will serve to protect its potential yield. Sewage disposal for the proposed development will utilize the Town sewer in Canal Street with no sewer disposal on site, therefore no impacts to surface waters or groundwater supplies from sewage are expected.

It is not expected that this development will increase pollution or turbidity levels within receiving waterways. The multifamily residential use is not a significant generator of pollution beyond potential pollution generated by runoff from paved surfaces. DEP Stormwater management Standards are met for the project including 80% TSS removal and 44% pretreatment as soils with rapid infiltration rates are present on site. This level of treatment will ensure no potential effects on downstream waterways, including the Blackstone River which is

located approximately 500 feet to the southeast of the project site. The project as designed will not increase flooding either toward the east the west or Canal Street to the south and the post development peak runoff rates to both discharge points will decrease for all storm events up to and including the 100-year event.

Flora and Fauna

The development is proposed in an area that is primarily lawn with limited wooded area. The proposed development will maintain 10% of the existing wooded cover adjacent to wetland areas to the west. Throughout the rest of the property, landscaping including trees and shrubs are proposed around all buildings and within the island in the central portion of the site. The remainder of the site will be loamed and seeded to maintain access around buildings and stormwater management facilities. The project is not expected to impact any wildlife corridors due to the proximity of the site to downtown Millbury. The property is not within any Estimated or Priority Habitats of Endangered Species.

Open Space & Recreation

The property is adjacent to Town owned land to the east which includes a park. For active recreation the proposed development includes walkways both within the site and connecting the site to the Town owned property to the east. Loamed and seeded areas on the site will be available for passive recreation purposes. The property does not contain any scenic views nor will any scenic views be obstructed.

MAN-MADE ENVIRONMENT

Aesthetics and Visual Impact

The project is designed to minimize visual impacts from the development on Canal Street and abutting land. The apartment building is set back 250 from the street behind an existing commercial building and away from existing residential buildings. Additional development on parcels adjacent to the site to the east and north area not expected as the abutting property to the east is owned by the Town and the undeveloped portion of the property to the north is to the rear of an existing auto body shop and hardware store.

The building will be three stories high with sloped roofs to give a residential appearance. The proposed project is consistent with existing residential development in the vicinity. The building will be constructed with wood frames and will have a residential style. The primary common recreation areas for residents will be the walking paths along with the dog park located on the eastern portion of the site. Laundry facilities will be provided within each unit. Garbage will be collected on in dumpsters located away from common areas and screened with fencing and vegetation so as to not be visible to people accessing the property or to abutting residences.

The primary lighting on the property will consist of pole mounted mixtures along the entrance driveway and in all parking areas, as well as building mounted lighting at entrance and egress doors to provide a safe and secure environment to those entering and leaving the site and their vehicles during the nighttime hours. All lighting will be directed away from either Canal Street or abutting properties to prevent the possibility of overspill onto either location.

Noise

Noise impacts will be limited to construction vehicles and equipment utilized for installation of roadway, utilities and building construction. Hours of operation will be Monday through Saturday 7:00 am to 7:00 p.m. Following the completion of construction, air and noise impacts will be limited to those typically associated with multiple residential developments, including traffic from parking areas to Canal Street and yard activity. Traffic is expected to be limited to cars and an occasional delivery vehicle travelling at low rates of speed.

Water Supply

Water demand will be typically based Title 5 sewage flows. Typical water usage of 110 gallons/day per bedroom will result in 110 gal/day * 73 bedrooms = 8,030 gal/day of additional water usage. An 8" water main will service the property to provide fire protection and a hydrant has been provided on site.

Solid Waste

Solid waste is expected to be typical of that generated by residential uses. It will be disposed of in screened dumpsters. The waste will be collected on a weekly basis by a private contractor.

Stormwater System

The stormwater management system for the project is designed with two discharge locations. The first is toward Canal Street to the South. The second is toward the eastern property line. The project is designed to be in compliance with all MA DEP Stormwater Management Standard. A minimum of 80% TSS removal including 44% pretreatment is provided at both discharge locations to ensure there is no increase in offsite pollution. An Operation & Maintenance Plan is included with the Stormwater Management Report to ensure that the effectiveness of the stormwater management system in removing pollutants is maintained.

The stormwater management system as designed, does not result in any increase to peak runoff rates to either discharge location for all storm events up to and including the 100-year storm. The project will not result in any increased risk of flooding nor will it affect the capacity of the existing storm drainage system in Canal Street to receive runoff. A summary table showing the changes in peak runoff rates in all storm events for both discharge locations is provided below:

Drainage Analysis Summary

Pre-Development Drainage Reach (1R) – Existing Conditions Runoff to Canal Street

Pre-Development Drainage Reach (2R) – Existing Conditions Runoff to East (E1)

Post-Development Drainage Reach (1R) – Combined Post Development Runoff to Canal Street (P1)

Post-Development Drainage Reach (1R) – Combined Post Development Runoff to East (P2, P3, P4, P5)

Note: (Peak Flow Rate in cfs)

| | <u>2 Year</u> | <u>10 Year</u> | <u>25 Year</u> | <u>100 Year</u> |
|---|---------------|----------------|----------------|-----------------|
| Storm Intensity | 3.2 inches | 4.9 inches | 6.1 inches | 8.5 inches |
| Pre-Development (1R) To Canal Street | 0.00 | 0.00 | 0.00 | 0.00 |
| Pre-Development (E1) | 0.00 | 0.03 | 0.18 | 1.34 |
| Pre-Development (1R) To East | 0.00 | 0.03 | 0.18 | 1.34 |
| Post-Development (P1 Routed Through Chamber 1) | 0.00 | 0.00 | 0.00 | 0.00 |
| Post-Development (1R) To Canal Street | 0.00 | 0.00 | 0.00 | 0.00 |
| Post-Development (P2 Routed Through Chamber 2) | 0.00 | 0.00 | 0.00 | 0.68 |
| Post-Development (P3 Routed Through Chamber 3) | 0.00 | 0.00 | 0.00 | 0.00 |
| Post-Development (P4 Routed Through Chamber 4) | 0.00 | 0.00 | 0.00 | 0.37 |
| Post-Development (P5) | 0.00 | 0.03 | 0.16 | 0.83 |
| Post-Development (2R) To East | 0.00 | 0.00 | 0.00 | 1.30 |
| Reduction From Pre- to Post-Development (1R) | -0.00 | -0.00 | -0.00 | -0.00 |
| Reduction From Pre- to Post-Development (2R) | -0.00 | -0.00 | -0.01 | -0.04 |

Sewage Disposal

The proposed development plan contains 59 units which will be one or two bedrooms each. Under Title 5 (310 CMR 15.00) the total design sewage flow for this development is 110 gal/day per bedroom * 73 bedrooms = 8,030 gal/day. This development will be serviced by Town Sewer which currently existing in Canal Street

COMMUNITY SERVICES

Schools

Utilizing the latest data from the Massachusetts Departments of Revenue and Elementary and Secondary Education, Millbury has approximately 0.33 school children per residential parcel. However, apartments generate less school-aged children per dwelling unit than a single family dwelling. Statistics vary but one and two bedroom apartments tend to generate 66-75% of the average school children per dwelling unit compared to a single family dwelling. Utilizing the 75% value. The development is expected to generate 15 school-aged children.

Millbury Junior/Senior High School is the closest to the site, approximate 0.75 mile to the west of the project site. Elmwood Street and Raymond E. Shaw Elementary Schools are just over 1 mile away to the southwest.

Police

We don't anticipate any significant impact to police services.

Fire

The building will be serviced by an 8" water main and be sprinkled. Additionally a hydrant is proposed within the site to improve fire protection capabilities. The Fire Department is located approximately 3000 feet to the south of the property on Elm Street so response time is expected to be no longer than a couple of minutes.

Public Works

No public roadways or utilities are proposed as part of this project and all infrastructure on site will be privately maintained so no public works costs to the Town from this project are expected.

FISCAL IMPACT REPORT
19 CANAL STREET
MILLBURY, MASSACHUSETTS
April 9, 2021

Prepared for:
ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MASSACHUSETTS 01581

Prepared by:
J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MA 01752

Project Number:
G-611
Millbury, Massachusetts

J.M. GRENIER ASSOCIATES INC.

LAND PLANNING • CIVIL ENGINEERING

PROJECT COSTS - 19 CANAL STREET

| | | Proposed Development |
|----------------------|--------------|----------------------|
| Education Budget | \$26,287,803 | |
| Student Enrollment | 1,700 | |
| Cost per Student | \$15,463 | |
| School-Aged Children | 15 | \$231,951 |
| Cost to Education | | \$231,951 |

| | | |
|---|-------------------------|-----------|
| Other Gov't Expenditures | \$21,861,651 | |
| Total Assessed Values | \$1,889,846,182 | |
| Residential Portion of Assessed Values | \$1,464,698,741 (77.5%) | |
| Other Expenditures Attributed to Residential Values | \$16,942,780 | |
| Total Parcels in Town | 5,671 | |
| Residential Parcels | 5,122 | |
| Other Expenditures/Residential Parcels | | \$3,308 |
| Other Project Costs | | \$235,259 |

| | | |
|----------------------------|--|------------------|
| TOTAL PROJECT COSTS | | \$235,259 |
|----------------------------|--|------------------|

PROJECT REVENUES - 19 CANAL STREET

| | | Proposed Development |
|----------------------|---------------------|----------------------|
| Total Project Value | | \$15,000,000 |
| FY2021 Tax Rate | \$15.43 per \$1,000 | 256,500 |
| Property Tax Revenue | | \$256,500 |

| | | |
|---|-------------|----------|
| Education Aid | \$7,726,279 | |
| Student Enrollment | 1,700 | |
| Education Aid per Student | \$4,545 | |
| Projected School Age Children | 15 | \$68,173 |
| Project Revenues from School-Age Children | | \$68,173 |

| | | |
|--|-------------------------|-----------|
| Other Revenue (Non-Levy & Non-Education) | \$15,068,246 | |
| Total Assessed Values | \$1,889,846,182 | |
| Residential Portion of Total Assessed Values | \$1,464,698,741 (77.5%) | |
| Other Revenue Attributed to Residential Values | \$11,677,891 | |
| Total Parcels in Town | 5,671 | |
| Residential Parcels | 5,122 | |
| Other Revenue/Residential Parcel | | \$2,280 |
| Other Project Revenue | | \$326,953 |

| | | |
|------------------------------|--|------------------|
| TOTAL PROJECT REVENUE | | \$326,953 |
|------------------------------|--|------------------|

PROJECT SUMMARY

| | Residential Development |
|------------------------|-------------------------|
| Total Project Costs | -\$235,259 |
| Total Project Revenues | \$326,953 |
| Total Cost/Benefit | \$91,694 |

STORMWATER MANAGEMENT REPORT
19 CANAL STREET
MILLBURY, MASSACHUSETTS
April 9, 2021

Prepared for:
ELITE HOME BUILDERS, LLC
P.O. Box 1205
WESTBOROUGH, MASSACHUSETTS 01581

Prepared by:
J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MA 01752

Project Number:
G-611
Millbury, Massachusetts

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OPERATION AND MAINTENANCE PLAN

SOIL SURVEY DATA FOR LOCUS SITE

PRE AND POST DEVELOPMENT DRAINAGE PLANS

DRAINAGE NARRATIVE

Design Methods and Objectives

The following drainage analysis has been prepared in accordance with the most current rules and regulations of the Town of Millbury, Massachusetts. Watershed areas were calculated for both the pre-development and post-development conditions. Existing and proposed ground cover conditions as well as terrain slopes were evaluated. Based upon the increased peak runoff from pre-development to the post development, storm water management systems were designed to attenuate the post development peak flows and runoff to be less than or equal to the pre-development rates of runoff. These calculations were performed using Hydrocad Stormwater Modeling Software for determining peak runoff and sizing detention/infiltration facilities for the 2, 10, 25 and 100 year storm event frequencies. Runoff hydrographs are calculated using the SCS Runoff equation and the SCS unitless hydrograph.

Existing Site Conditions

The existing site conditions were analyzed to determine tributary site runoff areas, flow patterns, impervious area, open space including wooded areas, as well as existing soil types. The drainage area that was analyzed includes the site at 19 Canal Street to be developed. The existing study area includes lawn and wooded area. The total tributary drainage area is 2.62 acres. The existing slopes on site range from 4-30%. The site currently drains to the north.

Existing soils located on site were determined to be Hinckley-Urban land complex and Udorthents. Hinckley is classified as Hydrologic Group A and has a drainage class rating of “excessively drained”. Udorthents do have a hydrologic group assigned but were determined to be Hydrologic Group A based on soil testing performed on site. Included in Appendix C are soil log forms detailing our finding from on site soil testing performed at this site. This soil testing was used to verify the hydrologic group of the soils at the site and determine seasonal high groundwater levels as the drainage design includes infiltration.

Proposed Site Conditions

In the post development condition, the property is proposed to be developed with a 59-unit residential building with associated pavement/parking area. The total impervious area in the post development condition is 1.59 acres. The total percentage of impervious area in the post development condition is 60.7%. The remaining portion of the site is to remain as lawn.

The proposed site drainage is separated into five subcatchment drainage areas. These subcatchments are physically separate in the post development condition through the use of deep sump catch basins, Stormceptors and infiltration chambers. These methods are used in order to reduce peak runoff rates and treat runoff from developed paved areas in order to meet TSS removal requirements.

“Subcatchment P1” includes pavement from the proposed site entrance and some lawn. The runoff from paved areas is directed via deep sump catch basins into a Stormceptor and infiltration chambers prior to discharge. The Stormceptor and infiltration chambers provide 80% TSS removal including 44% pretreatment for all paved areas.

“Subcatchment P2” includes the parking area and a portion of the proposed building. The runoff from paved areas is directed via deep sump catch basins into a Stormceptor and infiltration chambers prior to discharge. The Stormceptor and infiltration chambers provide 80% TSS removal including 44% pretreatment for all paved areas.

“Subcatchment P3” includes the northern roof area of the proposed building. This clean runoff is directed into infiltration chambers prior to discharge. The infiltration chambers attenuation of peak rates of runoff

“Subcatchment P4” includes the eastern roof area of the proposed building. This clean runoff is directed into infiltration chambers prior to discharge. The infiltration chambers attenuation of peak rates of runoff

“Subcatchment P5” includes lawn area. This clean runoff flows toward the east as it does in the existing condition.

The proposed drainage design for this development meets or exceeds all requirements by the Town of Millbury and the Department of Environmental Protection. As the calculations demonstrate the proposed drainage design provides attenuation of peak rates of runoff, improves the quality of site runoff that flows toward offsite areas and by achieving a minimum of 80% TSS removal including 44% pretreatment for all paved areas. The drainage design as proposed will improve the quality of runoff that currently exists on this site.

Drainage Analysis Summary

Pre-Development Drainage Reach (1R) – Existing Conditions Runoff to Canal Street

Pre-Development Drainage Reach (2R) – Existing Conditions Runoff to East (E1)

Post-Development Drainage Reach (1R) – Combined Post Development Runoff to Canal Street (P1)

Post-Development Drainage Reach (1R) – Combined Post Development Runoff to East (P2, P3, P4, P5)

Note: (Peak Flow Rate in cfs)

| | <u>2 Year</u> | <u>10 Year</u> | <u>25 Year</u> | <u>100 Year</u> |
|---|----------------------|-----------------------|-----------------------|------------------------|
| Storm Intensity | 3.2 inches | 4.9 inches | 6.1 inches | 8.5 inches |
| Pre-Development (1R) To Canal Street | 0.00 | 0.00 | 0.00 | 0.00 |
| Pre-Development (E1) | 0.00 | 0.03 | 0.18 | 1.34 |
| Pre-Development (1R) To East | 0.00 | 0.03 | 0.18 | 1.34 |
| Post-Development (P1 Routed Through Chamber 1) | 0.00 | 0.00 | 0.00 | 0.00 |
| Post-Development (1R) To Canal Street | 0.00 | 0.00 | 0.00 | 0.00 |
| Post-Development (P2 Routed Through Chamber 2) | 0.00 | 0.00 | 0.00 | 0.68 |
| Post-Development (P3 Routed Through Chamber 3) | 0.00 | 0.00 | 0.00 | 0.00 |
| Post-Development (P4 Routed Through Chamber 4) | 0.00 | 0.00 | 0.00 | 0.37 |
| Post-Development (P5) | 0.00 | 0.03 | 0.16 | 0.83 |
| Post-Development (2R) To East | 0.00 | 0.00 | 0.00 | 1.30 |
| Reduction From Pre- to Post-Development (1R) | -0.00 | -0.00 | -0.00 | -0.00 |
| Reduction From Pre- to Post-Development (2R) | -0.00 | -0.00 | -0.01 | -0.04 |

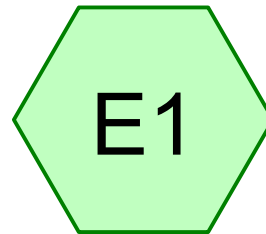


LOCUS PLAN

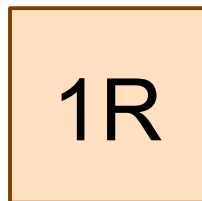
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Worcester South, MA
7.5 x 15 minute series (metric)
Scale: 1:25,000 or 1" = 2083.33'

19 Canal Street
Millbury, Massachusetts

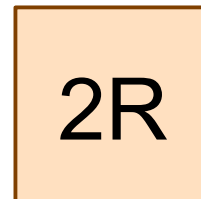
Prepared by: J.M. GRENIER ASSOCIATES -Marlborough, MA



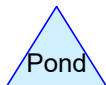
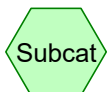
Existing Site Runoff



Canal Street



North Property Line



Routing Diagram for G-611-PRE

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G-611-PRE

Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|-----------|---------------------------------------|
| 1.620 | 39 | Lawn, Good, HSG A (E1) |
| 1.000 | 30 | Woods, Good, HSG A (E1) |
| 2.620 | 36 | TOTAL AREA |

G-611-PRE

Type III 24-hr 2-YR Rainfall=3.20"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Existing Site Runoff Runoff Area=2.620 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=634' Tc=22.1 min CN=36 Runoff=0.00 cfs 0.000 af

Reach 1R: Canal Street

Reach 2R: North Property Line

Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 2.620 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 2.620 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment E1: Existing Site Runoff

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| 1.000 | 30 | Woods, Good, HSG A |
| * 1.620 | 39 | Lawn, Good, HSG A |
| 2.620 | 36 | Weighted Average |
| 2.620 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.2 | 50 | 0.0600 | 0.10 | | Sheet Flow, Segment 1 Woods: Light underbrush n= 0.400 P2= 3.00" |
| 7.8 | 372 | 0.0130 | 0.80 | | Shallow Concentrated Flow, Segment 2 Short Grass Pasture Kv= 7.0 fps |
| 0.4 | 42 | 0.1190 | 1.72 | | Shallow Concentrated Flow, Segment 3 Woodland Kv= 5.0 fps |
| 5.7 | 170 | 0.0100 | 0.50 | | Shallow Concentrated Flow, Segment 4 Woodland Kv= 5.0 fps |
| 22.1 | 634 | Total | | | |

Summary for Reach 1R: Canal Street

Summary for Reach 2R: North Property Line

Inflow Area = 2.620 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

G-611-PRE

Type III 24-hr 10-YR Rainfall=4.90"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Existing Site Runoff

Runoff Area=2.620 ac 0.00% Impervious Runoff Depth>0.07"
Flow Length=634' Tc=22.1 min CN=36 Runoff=0.03 cfs 0.014 af

Reach 1R: Canal Street

Reach 2R: North Property Line

Inflow=0.03 cfs 0.014 af
Outflow=0.03 cfs 0.014 af

Total Runoff Area = 2.620 ac Runoff Volume = 0.014 af Average Runoff Depth = 0.07"
100.00% Pervious = 2.620 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment E1: Existing Site Runoff

Runoff = 0.03 cfs @ 15.23 hrs, Volume= 0.014 af, Depth> 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.90"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| 1.000 | 30 | Woods, Good, HSG A |
| * 1.620 | 39 | Lawn, Good, HSG A |
| 2.620 | 36 | Weighted Average |
| 2.620 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.2 | 50 | 0.0600 | 0.10 | | Sheet Flow, Segment 1 Woods: Light underbrush n= 0.400 P2= 3.00" |
| 7.8 | 372 | 0.0130 | 0.80 | | Shallow Concentrated Flow, Segment 2 Short Grass Pasture Kv= 7.0 fps |
| 0.4 | 42 | 0.1190 | 1.72 | | Shallow Concentrated Flow, Segment 3 Woodland Kv= 5.0 fps |
| 5.7 | 170 | 0.0100 | 0.50 | | Shallow Concentrated Flow, Segment 4 Woodland Kv= 5.0 fps |
| 22.1 | 634 | Total | | | |

Summary for Reach 1R: Canal Street

Summary for Reach 2R: North Property Line

Inflow Area = 2.620 ac, 0.00% Impervious, Inflow Depth > 0.07" for 10-YR event
 Inflow = 0.03 cfs @ 15.23 hrs, Volume= 0.014 af
 Outflow = 0.03 cfs @ 15.23 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

G-611-PRE

Type III 24-hr 25-YR Rainfall=6.10"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Existing Site Runoff Runoff Area=2.620 ac 0.00% Impervious Runoff Depth>0.25"
Flow Length=634' Tc=22.1 min CN=36 Runoff=0.18 cfs 0.055 af

Reach 1R: Canal Street

Reach 2R: North Property Line

Inflow=0.18 cfs 0.055 af
Outflow=0.18 cfs 0.055 af

Total Runoff Area = 2.620 ac Runoff Volume = 0.055 af Average Runoff Depth = 0.25"
100.00% Pervious = 2.620 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment E1: Existing Site Runoff

Runoff = 0.18 cfs @ 12.67 hrs, Volume= 0.055 af, Depth> 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.10"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| 1.000 | 30 | Woods, Good, HSG A |
| * 1.620 | 39 | Lawn, Good, HSG A |
| 2.620 | 36 | Weighted Average |
| 2.620 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.2 | 50 | 0.0600 | 0.10 | | Sheet Flow, Segment 1 Woods: Light underbrush n= 0.400 P2= 3.00" |
| 7.8 | 372 | 0.0130 | 0.80 | | Shallow Concentrated Flow, Segment 2 Short Grass Pasture Kv= 7.0 fps |
| 0.4 | 42 | 0.1190 | 1.72 | | Shallow Concentrated Flow, Segment 3 Woodland Kv= 5.0 fps |
| 5.7 | 170 | 0.0100 | 0.50 | | Shallow Concentrated Flow, Segment 4 Woodland Kv= 5.0 fps |
| 22.1 | 634 | Total | | | |

Summary for Reach 1R: Canal Street

Summary for Reach 2R: North Property Line

Inflow Area = 2.620 ac, 0.00% Impervious, Inflow Depth > 0.25" for 25-YR event

Inflow = 0.18 cfs @ 12.67 hrs, Volume= 0.055 af

Outflow = 0.18 cfs @ 12.67 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

G-611-PRE

Type III 24-hr 100-YR Rainfall=8.50"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Existing Site Runoff

Runoff Area=2.620 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=634' Tc=22.1 min CN=36 Runoff=1.34 cfs 0.202 af

Reach 1R: Canal Street

Reach 2R: North Property Line

Inflow=1.34 cfs 0.202 af
Outflow=1.34 cfs 0.202 af

Total Runoff Area = 2.620 ac Runoff Volume = 0.202 af Average Runoff Depth = 0.92"
100.00% Pervious = 2.620 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment E1: Existing Site Runoff

Runoff = 1.34 cfs @ 12.46 hrs, Volume= 0.202 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.50"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| 1.000 | 30 | Woods, Good, HSG A |
| * 1.620 | 39 | Lawn, Good, HSG A |
| 2.620 | 36 | Weighted Average |
| 2.620 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.2 | 50 | 0.0600 | 0.10 | | Sheet Flow, Segment 1 Woods: Light underbrush n= 0.400 P2= 3.00" |
| 7.8 | 372 | 0.0130 | 0.80 | | Shallow Concentrated Flow, Segment 2 Short Grass Pasture Kv= 7.0 fps |
| 0.4 | 42 | 0.1190 | 1.72 | | Shallow Concentrated Flow, Segment 3 Woodland Kv= 5.0 fps |
| 5.7 | 170 | 0.0100 | 0.50 | | Shallow Concentrated Flow, Segment 4 Woodland Kv= 5.0 fps |
| 22.1 | 634 | Total | | | |

Summary for Reach 1R: Canal Street

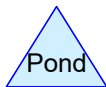
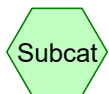
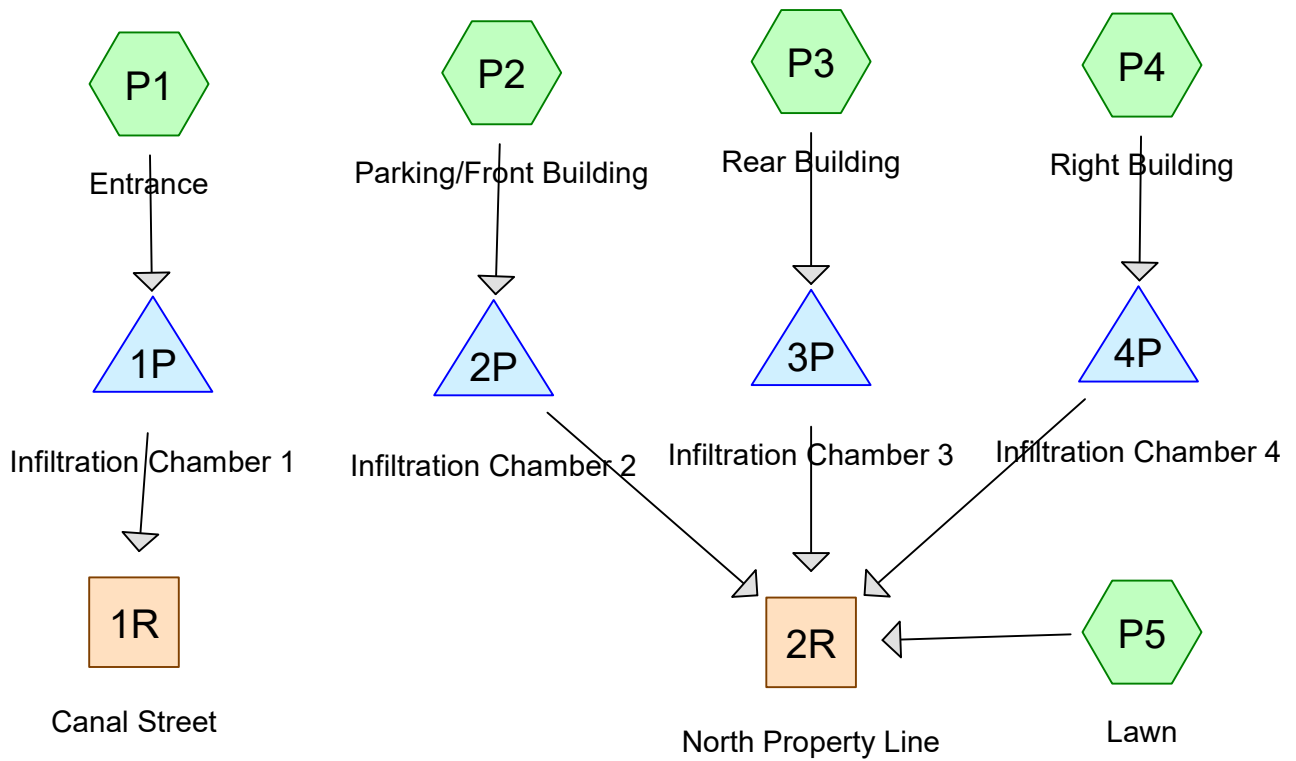
Summary for Reach 2R: North Property Line

Inflow Area = 2.620 ac, 0.00% Impervious, Inflow Depth > 0.92" for 100-YR event

Inflow = 1.34 cfs @ 12.46 hrs, Volume= 0.202 af

Outflow = 1.34 cfs @ 12.46 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Routing Diagram for G-611-POST
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G-611-POST

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Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|-----------|---------------------------------------|
| 1.610 | 98 | Impervious (P1, P2, P3, P4, P5) |
| 1.010 | 39 | Lawn, Good, HSG A (P1, P2, P5) |
| 2.620 | 75 | TOTAL AREA |

G-611-POST

Type III 24-hr 2-YR Rainfall=3.20"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment P1: Entrance | Runoff Area=0.160 ac 43.75% Impervious Runoff Depth>0.53" Flow Length=153' Tc=6.0 min CN=65 Runoff=0.09 cfs 0.007 af |
| Subcatchment P2: Parking/Front Building | Runoff Area=1.440 ac 84.03% Impervious Runoff Depth>1.95" Flow Length=153' Tc=6.0 min CN=89 Runoff=3.42 cfs 0.234 af |
| Subcatchment P3: Rear Building | Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>2.77" Flow Length=130' Tc=6.0 min CN=98 Runoff=0.27 cfs 0.021 af |
| Subcatchment P4: Right Building | Runoff Area=0.230 ac 100.00% Impervious Runoff Depth>2.77" Flow Length=260' Tc=6.0 min CN=98 Runoff=0.70 cfs 0.053 af |
| Subcatchment P5: Lawn | Runoff Area=0.700 ac 1.43% Impervious Runoff Depth>0.00" Flow Length=226' Tc=7.7 min CN=40 Runoff=0.00 cfs 0.000 af |
| Reach 1R: Canal Street | Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af |
| Reach 2R: North Property Line | Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af |
| Pond 1P: Infiltration Chamber 1 | Peak Elev=371.02' Storage=7 cf Inflow=0.09 cfs 0.007 af Discarded=0.08 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.007 af |
| Pond 2P: Infiltration Chamber 2 | Peak Elev=370.57' Storage=2,065 cf Inflow=3.42 cfs 0.234 af Discarded=0.99 cfs 0.234 af Primary=0.00 cfs 0.000 af Outflow=0.99 cfs 0.234 af |
| Pond 3P: Infiltration Chamber 3 | Peak Elev=370.44' Storage=167 cf Inflow=0.27 cfs 0.021 af Discarded=0.08 cfs 0.021 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.021 af |
| Pond 4P: Infiltration Chamber 4 | Peak Elev=370.77' Storage=440 cf Inflow=0.70 cfs 0.053 af Discarded=0.20 cfs 0.053 af Primary=0.00 cfs 0.000 af Outflow=0.20 cfs 0.053 af |
| Total Runoff Area = 2.620 ac Runoff Volume = 0.316 af Average Runoff Depth = 1.45" | |
| 38.55% Pervious = 1.010 ac 61.45% Impervious = 1.610 ac | |

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Type III 24-hr 2-YR Rainfall=3.20"

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Summary for Subcatchment P1: Entrance

Runoff = 0.09 cfs @ 12.11 hrs, Volume= 0.007 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 0.070 | 98 | Impervious |
| * 0.090 | 39 | Lawn, Good, HSG A |
| 0.160 | 65 | Weighted Average |
| 0.090 | | 56.25% Pervious Area |
| 0.070 | | 43.75% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P2: Parking/Front Building

Runoff = 3.42 cfs @ 12.09 hrs, Volume= 0.234 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 1.210 | 98 | Impervious |
| * 0.230 | 39 | Lawn, Good, HSG A |
| 1.440 | 89 | Weighted Average |
| 0.230 | | 15.97% Pervious Area |
| 1.210 | | 84.03% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P3: Rear Building

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.021 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.090 | 98 | Impervious |
| 0.090 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 130 | | 0.36 | | Direct Entry, Segment 1 |

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Type III 24-hr 2-YR Rainfall=3.20"

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Summary for Subcatchment P4: Right Building

Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.230 | 98 | Impervious |
| 0.230 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 260 | | 0.72 | | Direct Entry, Segment 1 |

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Type III 24-hr 2-YR Rainfall=3.20"

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Summary for Subcatchment P5: Lawn

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| * 0.010 | 98 | Impervious |
| * 0.690 | 39 | Lawn, Good, HSG A |
| 0.700 | 40 | Weighted Average |
| 0.690 | | 98.57% Pervious Area |
| 0.010 | | 1.43% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.8 | 50 | 0.0200 | 0.14 | | Sheet Flow, Segment 1 |
| | | | | | Grass: Short n= 0.150 P2= 3.00" |
| 1.9 | 176 | 0.0510 | 1.58 | | Shallow Concentrated Flow, Segment 2 |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 226 | Total | | | |

Summary for Reach 1R: Canal Street

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth = 0.00" for 2-YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: North Property Line

Inflow Area = 2.460 ac, 62.60% Impervious, Inflow Depth > 0.00" for 2-YR event
Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Infiltration Chamber 1

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth > 0.53" for 2-YR event
 Inflow = 0.09 cfs @ 12.11 hrs, Volume= 0.007 af
 Outflow = 0.08 cfs @ 12.14 hrs, Volume= 0.007 af, Atten= 7%, Lag= 1.7 min
 Discarded = 0.08 cfs @ 12.14 hrs, Volume= 0.007 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.02' @ 12.14 hrs Surf.Area= 793 sf Storage= 7 cf

Plug-Flow detention time= 1.3 min calculated for 0.007 af (100% of inflow)
 Center-of-Mass det. time= 1.0 min (843.8 - 842.7)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 371.00' | 779 cf | 16.75'W x 47.34'L x 3.50'H Field A 2,775 cf Overall - 827 cf Embedded = 1,948 cf x 40.0% Voids |
| #2A | 371.50' | 827 cf | ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows |
| | | 1,606 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 371.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 374.17' | 8.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 374.17' / 374.07' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf |

Discarded OutFlow Max=0.15 cfs @ 12.14 hrs HW=371.02' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)
 ↑2=Culvert (Controls 0.00 cfs)

Stage-Area-Storage for Pond 1P: Infiltration Chamber 1

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 371.00 | 793 | 0 | 373.60 | 793 | 1,302 |
| 371.05 | 793 | 16 | 373.65 | 793 | 1,323 |
| 371.10 | 793 | 32 | 373.70 | 793 | 1,343 |
| 371.15 | 793 | 48 | 373.75 | 793 | 1,362 |
| 371.20 | 793 | 63 | 373.80 | 793 | 1,381 |
| 371.25 | 793 | 79 | 373.85 | 793 | 1,398 |
| 371.30 | 793 | 95 | 373.90 | 793 | 1,415 |
| 371.35 | 793 | 111 | 373.95 | 793 | 1,432 |
| 371.40 | 793 | 127 | 374.00 | 793 | 1,448 |
| 371.45 | 793 | 143 | 374.05 | 793 | 1,463 |
| 371.50 | 793 | 159 | 374.10 | 793 | 1,479 |
| 371.55 | 793 | 189 | 374.15 | 793 | 1,495 |
| 371.60 | 793 | 219 | 374.20 | 793 | 1,511 |
| 371.65 | 793 | 249 | 374.25 | 793 | 1,527 |
| 371.70 | 793 | 279 | 374.30 | 793 | 1,543 |
| 371.75 | 793 | 309 | 374.35 | 793 | 1,559 |
| 371.80 | 793 | 339 | 374.40 | 793 | 1,574 |
| 371.85 | 793 | 369 | 374.45 | 793 | 1,590 |
| 371.90 | 793 | 398 | 374.50 | 793 | 1,606 |
| 371.95 | 793 | 428 | 374.55 | 793 | 1,606 |
| 372.00 | 793 | 457 | 374.60 | 793 | 1,606 |
| 372.05 | 793 | 487 | 374.65 | 793 | 1,606 |
| 372.10 | 793 | 516 | 374.70 | 793 | 1,606 |
| 372.15 | 793 | 545 | 374.75 | 793 | 1,606 |
| 372.20 | 793 | 574 | 374.80 | 793 | 1,606 |
| 372.25 | 793 | 603 | | | |
| 372.30 | 793 | 631 | | | |
| 372.35 | 793 | 660 | | | |
| 372.40 | 793 | 688 | | | |
| 372.45 | 793 | 717 | | | |
| 372.50 | 793 | 745 | | | |
| 372.55 | 793 | 773 | | | |
| 372.60 | 793 | 800 | | | |
| 372.65 | 793 | 828 | | | |
| 372.70 | 793 | 855 | | | |
| 372.75 | 793 | 882 | | | |
| 372.80 | 793 | 909 | | | |
| 372.85 | 793 | 936 | | | |
| 372.90 | 793 | 962 | | | |
| 372.95 | 793 | 989 | | | |
| 373.00 | 793 | 1,015 | | | |
| 373.05 | 793 | 1,041 | | | |
| 373.10 | 793 | 1,066 | | | |
| 373.15 | 793 | 1,091 | | | |
| 373.20 | 793 | 1,116 | | | |
| 373.25 | 793 | 1,141 | | | |
| 373.30 | 793 | 1,165 | | | |
| 373.35 | 793 | 1,189 | | | |
| 373.40 | 793 | 1,212 | | | |
| 373.45 | 793 | 1,235 | | | |
| 373.50 | 793 | 1,258 | | | |
| 373.55 | 793 | 1,280 | | | |

Summary for Pond 2P: Infiltration Chamber 2

Inflow Area = 1.440 ac, 84.03% Impervious, Inflow Depth > 1.95" for 2-YR event
 Inflow = 3.42 cfs @ 12.09 hrs, Volume= 0.234 af
 Outflow = 0.99 cfs @ 11.90 hrs, Volume= 0.234 af, Atten= 71%, Lag= 0.0 min
 Discarded = 0.99 cfs @ 11.90 hrs, Volume= 0.234 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 370.57' @ 12.44 hrs Surf.Area= 5,154 sf Storage= 2,065 cf

Plug-Flow detention time= 12.1 min calculated for 0.233 af (100% of inflow)
 Center-of-Mass det. time= 11.6 min (789.7 - 778.1)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 7,573 cf | 47.25'W x 109.08'L x 5.50'H Field A 28,347 cf Overall - 9,415 cf Embedded = 18,932 cf x 40.0% Voids |
| #2A | 370.45' | 9,415 cf | ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 84 Chambers in 6 Rows Cap Storage= +14.9 cf x 2 x 6 rows = 178.8 cf |
| | | 16,988 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 373.00' | 12.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 373.00' / 372.20' S= 0.0143 '/ Cc= 0.900 n= 0.011, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.99 cfs @ 11.90 hrs HW=369.77' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)
 ↑2=Culvert (Controls 0.00 cfs)

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Stage-Area-Storage for Pond 2P: Infiltration Chamber 2

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 5,154 | 0 | 374.90 | 5,154 | 16,369 |
| 369.80 | 5,154 | 206 | 375.00 | 5,154 | 16,575 |
| 369.90 | 5,154 | 412 | 375.10 | 5,154 | 16,782 |
| 370.00 | 5,154 | 618 | 375.20 | 5,154 | 16,988 |
| 370.10 | 5,154 | 825 | | | |
| 370.20 | 5,154 | 1,031 | | | |
| 370.30 | 5,154 | 1,237 | | | |
| 370.40 | 5,154 | 1,443 | | | |
| 370.50 | 5,154 | 1,757 | | | |
| 370.60 | 5,154 | 2,178 | | | |
| 370.70 | 5,154 | 2,598 | | | |
| 370.80 | 5,154 | 3,016 | | | |
| 370.90 | 5,154 | 3,432 | | | |
| 371.00 | 5,154 | 3,847 | | | |
| 371.10 | 5,154 | 4,259 | | | |
| 371.20 | 5,154 | 4,670 | | | |
| 371.30 | 5,154 | 5,079 | | | |
| 371.40 | 5,154 | 5,486 | | | |
| 371.50 | 5,154 | 5,891 | | | |
| 371.60 | 5,154 | 6,293 | | | |
| 371.70 | 5,154 | 6,692 | | | |
| 371.80 | 5,154 | 7,089 | | | |
| 371.90 | 5,154 | 7,483 | | | |
| 372.00 | 5,154 | 7,873 | | | |
| 372.10 | 5,154 | 8,260 | | | |
| 372.20 | 5,154 | 8,644 | | | |
| 372.30 | 5,154 | 9,024 | | | |
| 372.40 | 5,154 | 9,400 | | | |
| 372.50 | 5,154 | 9,772 | | | |
| 372.60 | 5,154 | 10,139 | | | |
| 372.70 | 5,154 | 10,502 | | | |
| 372.80 | 5,154 | 10,859 | | | |
| 372.90 | 5,154 | 11,211 | | | |
| 373.00 | 5,154 | 11,557 | | | |
| 373.10 | 5,154 | 11,896 | | | |
| 373.20 | 5,154 | 12,229 | | | |
| 373.30 | 5,154 | 12,554 | | | |
| 373.40 | 5,154 | 12,870 | | | |
| 373.50 | 5,154 | 13,177 | | | |
| 373.60 | 5,154 | 13,474 | | | |
| 373.70 | 5,154 | 13,757 | | | |
| 373.80 | 5,154 | 14,023 | | | |
| 373.90 | 5,154 | 14,267 | | | |
| 374.00 | 5,154 | 14,496 | | | |
| 374.10 | 5,154 | 14,715 | | | |
| 374.20 | 5,154 | 14,926 | | | |
| 374.30 | 5,154 | 15,132 | | | |
| 374.40 | 5,154 | 15,338 | | | |
| 374.50 | 5,154 | 15,545 | | | |
| 374.60 | 5,154 | 15,751 | | | |
| 374.70 | 5,154 | 15,957 | | | |
| 374.80 | 5,154 | 16,163 | | | |

Summary for Pond 3P: Infiltration Chamber 3

Inflow Area = 0.090 ac, 100.00% Impervious, Inflow Depth > 2.77" for 2-YR event
 Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.021 af
 Outflow = 0.08 cfs @ 11.90 hrs, Volume= 0.021 af, Atten= 70%, Lag= 0.0 min
 Discarded = 0.08 cfs @ 11.90 hrs, Volume= 0.021 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 370.44' @ 12.40 hrs Surf.Area= 431 sf Storage= 167 cf

Plug-Flow detention time= 11.5 min calculated for 0.021 af (100% of inflow)
 Center-of-Mass det. time= 11.2 min (749.8 - 738.6)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 420 cf | 11.00'W x 39.22'L x 3.50'H Field A 1,510 cf Overall - 459 cf Embedded = 1,050 cf x 40.0% Voids |
| #2A | 370.20' | 459 cf | ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 10 Chambers in 2 Rows |
| #3 | 373.20' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 887 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.20 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 379.50' | 4.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.08 cfs @ 11.90 hrs HW=369.83' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Infiltration Chamber 3

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 431 | 0 | 377.50 | 432 | 884 |
| 369.85 | 431 | 26 | 377.65 | 432 | 884 |
| 370.00 | 431 | 52 | 377.80 | 432 | 884 |
| 370.15 | 431 | 78 | 377.95 | 432 | 884 |
| 370.30 | 431 | 119 | 378.10 | 432 | 884 |
| 370.45 | 431 | 169 | 378.25 | 432 | 885 |
| 370.60 | 431 | 218 | 378.40 | 432 | 885 |
| 370.75 | 431 | 266 | 378.55 | 432 | 885 |
| 370.90 | 431 | 314 | 378.70 | 432 | 885 |
| 371.05 | 431 | 362 | 378.85 | 432 | 885 |
| 371.20 | 431 | 408 | 379.00 | 432 | 885 |
| 371.35 | 431 | 454 | 379.15 | 432 | 886 |
| 371.50 | 431 | 499 | 379.30 | 432 | 886 |
| 371.65 | 431 | 542 | 379.45 | 432 | 886 |
| 371.80 | 431 | 585 | 379.60 | 432 | 886 |
| 371.95 | 431 | 626 | 379.75 | 432 | 886 |
| 372.10 | 431 | 665 | 379.90 | 432 | 886 |
| 372.25 | 431 | 702 | 380.05 | 432 | 886 |
| 372.40 | 431 | 736 | 380.20 | 432 | 887 |
| 372.55 | 431 | 766 | 380.35 | 432 | 887 |
| 372.70 | 431 | 793 | 380.50 | 432 | 887 |
| 372.85 | 431 | 819 | | | |
| 373.00 | 431 | 845 | | | |
| 373.15 | 431 | 871 | | | |
| 373.30 | 432 | 880 | | | |
| 373.45 | 432 | 880 | | | |
| 373.60 | 432 | 880 | | | |
| 373.75 | 432 | 880 | | | |
| 373.90 | 432 | 880 | | | |
| 374.05 | 432 | 880 | | | |
| 374.20 | 432 | 881 | | | |
| 374.35 | 432 | 881 | | | |
| 374.50 | 432 | 881 | | | |
| 374.65 | 432 | 881 | | | |
| 374.80 | 432 | 881 | | | |
| 374.95 | 432 | 881 | | | |
| 375.10 | 432 | 881 | | | |
| 375.25 | 432 | 882 | | | |
| 375.40 | 432 | 882 | | | |
| 375.55 | 432 | 882 | | | |
| 375.70 | 432 | 882 | | | |
| 375.85 | 432 | 882 | | | |
| 376.00 | 432 | 882 | | | |
| 376.15 | 432 | 883 | | | |
| 376.30 | 432 | 883 | | | |
| 376.45 | 432 | 883 | | | |
| 376.60 | 432 | 883 | | | |
| 376.75 | 432 | 883 | | | |
| 376.90 | 432 | 883 | | | |
| 377.05 | 432 | 883 | | | |
| 377.20 | 432 | 884 | | | |
| 377.35 | 432 | 884 | | | |

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Summary for Pond 4P: Infiltration Chamber 4

Inflow Area = 0.230 ac, 100.00% Impervious, Inflow Depth > 2.77" for 2-YR event
 Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.053 af
 Outflow = 0.20 cfs @ 11.85 hrs, Volume= 0.053 af, Atten= 71%, Lag= 0.0 min
 Discarded = 0.20 cfs @ 11.85 hrs, Volume= 0.053 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 370.77' @ 12.41 hrs Surf.Area= 1,066 sf Storage= 440 cf

Plug-Flow detention time= 12.5 min calculated for 0.053 af (100% of inflow)
 Center-of-Mass det. time= 11.9 min (750.4 - 738.6)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 370.00' | 997 cf | 15.75'W x 67.70'L x 3.50'H Field A 3,732 cf Overall - 1,240 cf Embedded = 2,491 cf x 40.0% Voids |
| #2A | 370.50' | 1,240 cf | ADS_StormTech SC-740 +Cap x 27 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 27 Chambers in 3 Rows |
| #3 | 373.50' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 2,244 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.50 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 370.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 372.50' | 4.0" Horiz. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.20 cfs @ 11.85 hrs HW=370.11' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=370.00' (Free Discharge)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 4P: Infiltration Chamber 4

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 370.00 | 1,066 | 0 | 377.80 | 1,067 | 2,241 |
| 370.15 | 1,066 | 64 | 377.95 | 1,067 | 2,241 |
| 370.30 | 1,066 | 128 | 378.10 | 1,067 | 2,242 |
| 370.45 | 1,066 | 192 | 378.25 | 1,067 | 2,242 |
| 370.60 | 1,066 | 299 | 378.40 | 1,067 | 2,242 |
| 370.75 | 1,066 | 426 | 378.55 | 1,067 | 2,242 |
| 370.90 | 1,066 | 553 | 378.70 | 1,067 | 2,242 |
| 371.05 | 1,066 | 678 | 378.85 | 1,067 | 2,242 |
| 371.20 | 1,066 | 802 | 379.00 | 1,067 | 2,242 |
| 371.35 | 1,066 | 923 | 379.15 | 1,067 | 2,243 |
| 371.50 | 1,066 | 1,043 | 379.30 | 1,067 | 2,243 |
| 371.65 | 1,066 | 1,160 | 379.45 | 1,067 | 2,243 |
| 371.80 | 1,066 | 1,275 | 379.60 | 1,067 | 2,243 |
| 371.95 | 1,066 | 1,387 | 379.75 | 1,067 | 2,243 |
| 372.10 | 1,066 | 1,496 | 379.90 | 1,067 | 2,243 |
| 372.25 | 1,066 | 1,600 | 380.05 | 1,067 | 2,243 |
| 372.40 | 1,066 | 1,700 | 380.20 | 1,067 | 2,244 |
| 372.55 | 1,066 | 1,795 | 380.35 | 1,067 | 2,244 |
| 372.70 | 1,066 | 1,882 | 380.50 | 1,067 | 2,244 |
| 372.85 | 1,066 | 1,957 | | | |
| 373.00 | 1,066 | 2,024 | | | |
| 373.15 | 1,066 | 2,088 | | | |
| 373.30 | 1,066 | 2,152 | | | |
| 373.45 | 1,066 | 2,216 | | | |
| 373.60 | 1,067 | 2,237 | | | |
| 373.75 | 1,067 | 2,237 | | | |
| 373.90 | 1,067 | 2,237 | | | |
| 374.05 | 1,067 | 2,237 | | | |
| 374.20 | 1,067 | 2,238 | | | |
| 374.35 | 1,067 | 2,238 | | | |
| 374.50 | 1,067 | 2,238 | | | |
| 374.65 | 1,067 | 2,238 | | | |
| 374.80 | 1,067 | 2,238 | | | |
| 374.95 | 1,067 | 2,238 | | | |
| 375.10 | 1,067 | 2,239 | | | |
| 375.25 | 1,067 | 2,239 | | | |
| 375.40 | 1,067 | 2,239 | | | |
| 375.55 | 1,067 | 2,239 | | | |
| 375.70 | 1,067 | 2,239 | | | |
| 375.85 | 1,067 | 2,239 | | | |
| 376.00 | 1,067 | 2,239 | | | |
| 376.15 | 1,067 | 2,240 | | | |
| 376.30 | 1,067 | 2,240 | | | |
| 376.45 | 1,067 | 2,240 | | | |
| 376.60 | 1,067 | 2,240 | | | |
| 376.75 | 1,067 | 2,240 | | | |
| 376.90 | 1,067 | 2,240 | | | |
| 377.05 | 1,067 | 2,240 | | | |
| 377.20 | 1,067 | 2,241 | | | |
| 377.35 | 1,067 | 2,241 | | | |
| 377.50 | 1,067 | 2,241 | | | |
| 377.65 | 1,067 | 2,241 | | | |

G-611-POST

Type III 24-hr 10-YR Rainfall=4.90"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment P1: Entrance | Runoff Area=0.160 ac 43.75% Impervious Runoff Depth>1.45" Flow Length=153' Tc=6.0 min CN=65 Runoff=0.28 cfs 0.019 af |
| Subcatchment P2: Parking/Front Building | Runoff Area=1.440 ac 84.03% Impervious Runoff Depth>3.47" Flow Length=153' Tc=6.0 min CN=89 Runoff=5.90 cfs 0.416 af |
| Subcatchment P3: Rear Building | Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>4.33" Flow Length=130' Tc=6.0 min CN=98 Runoff=0.42 cfs 0.032 af |
| Subcatchment P4: Right Building | Runoff Area=0.230 ac 100.00% Impervious Runoff Depth>4.33" Flow Length=260' Tc=6.0 min CN=98 Runoff=1.08 cfs 0.083 af |
| Subcatchment P5: Lawn | Runoff Area=0.700 ac 1.43% Impervious Runoff Depth>0.17" Flow Length=226' Tc=7.7 min CN=40 Runoff=0.03 cfs 0.010 af |
| Reach 1R: Canal Street | Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af |
| Reach 2R: North Property Line | Inflow=0.03 cfs 0.010 af Outflow=0.03 cfs 0.010 af |
| Pond 1P: Infiltration Chamber 1 | Peak Elev=371.22' Storage=70 cf Inflow=0.28 cfs 0.019 af Discarded=0.15 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.019 af |
| Pond 2P: Infiltration Chamber 2 | Peak Elev=371.39' Storage=5,460 cf Inflow=5.90 cfs 0.416 af Discarded=0.99 cfs 0.416 af Primary=0.00 cfs 0.000 af Outflow=0.99 cfs 0.416 af |
| Pond 3P: Infiltration Chamber 3 | Peak Elev=371.07' Storage=366 cf Inflow=0.42 cfs 0.032 af Discarded=0.08 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.032 af |
| Pond 4P: Infiltration Chamber 4 | Peak Elev=371.39' Storage=955 cf Inflow=1.08 cfs 0.083 af Discarded=0.20 cfs 0.083 af Primary=0.00 cfs 0.000 af Outflow=0.20 cfs 0.083 af |
| Total Runoff Area = 2.620 ac Runoff Volume = 0.561 af Average Runoff Depth = 2.57" | |
| 38.55% Pervious = 1.010 ac 61.45% Impervious = 1.610 ac | |

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Type III 24-hr 10-YR Rainfall=4.90"

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Summary for Subcatchment P1: Entrance

Runoff = 0.28 cfs @ 12.10 hrs, Volume= 0.019 af, Depth> 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.90"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 0.070 | 98 | Impervious |
| * 0.090 | 39 | Lawn, Good, HSG A |
| 0.160 | 65 | Weighted Average |
| 0.090 | | 56.25% Pervious Area |
| 0.070 | | 43.75% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P2: Parking/Front Building

Runoff = 5.90 cfs @ 12.09 hrs, Volume= 0.416 af, Depth> 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.90"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 1.210 | 98 | Impervious |
| * 0.230 | 39 | Lawn, Good, HSG A |
| 1.440 | 89 | Weighted Average |
| 0.230 | | 15.97% Pervious Area |
| 1.210 | | 84.03% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P3: Rear Building

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.032 af, Depth> 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.90"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.090 | 98 | Impervious |
| 0.090 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 130 | | 0.36 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P4: Right Building

Runoff = 1.08 cfs @ 12.09 hrs, Volume= 0.083 af, Depth> 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.90"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.230 | 98 | Impervious |
| 0.230 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 260 | | 0.72 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P5: Lawn

Runoff = 0.03 cfs @ 12.48 hrs, Volume= 0.010 af, Depth> 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.90"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| * 0.010 | 98 | Impervious |
| * 0.690 | 39 | Lawn, Good, HSG A |
| 0.700 | 40 | Weighted Average |
| 0.690 | | 98.57% Pervious Area |
| 0.010 | | 1.43% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.8 | 50 | 0.0200 | 0.14 | | Sheet Flow, Segment 1 |
| | | | | | Grass: Short n= 0.150 P2= 3.00" |
| 1.9 | 176 | 0.0510 | 1.58 | | Shallow Concentrated Flow, Segment 2 |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 226 | Total | | | |

Summary for Reach 1R: Canal Street

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth = 0.00" for 10-YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: North Property Line

Inflow Area = 2.460 ac, 62.60% Impervious, Inflow Depth > 0.05" for 10-YR event
Inflow = 0.03 cfs @ 12.48 hrs, Volume= 0.010 af
Outflow = 0.03 cfs @ 12.48 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Infiltration Chamber 1

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth > 1.45" for 10-YR event
 Inflow = 0.28 cfs @ 12.10 hrs, Volume= 0.019 af
 Outflow = 0.15 cfs @ 12.05 hrs, Volume= 0.019 af, Atten= 45%, Lag= 0.0 min
 Discarded = 0.15 cfs @ 12.05 hrs, Volume= 0.019 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.22' @ 12.27 hrs Surf.Area= 793 sf Storage= 70 cf

Plug-Flow detention time= 3.0 min calculated for 0.019 af (100% of inflow)
 Center-of-Mass det. time= 2.7 min (821.0 - 818.4)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 371.00' | 779 cf | 16.75'W x 47.34'L x 3.50'H Field A 2,775 cf Overall - 827 cf Embedded = 1,948 cf x 40.0% Voids |
| #2A | 371.50' | 827 cf | ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows |
| | | 1,606 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 371.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 374.17' | 8.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 374.17' / 374.07' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf |

Discarded OutFlow Max=0.15 cfs @ 12.05 hrs HW=371.06' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)

↑2=Culvert (Controls 0.00 cfs)

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Stage-Area-Storage for Pond 1P: Infiltration Chamber 1

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 371.00 | 793 | 0 | 373.60 | 793 | 1,302 |
| 371.05 | 793 | 16 | 373.65 | 793 | 1,323 |
| 371.10 | 793 | 32 | 373.70 | 793 | 1,343 |
| 371.15 | 793 | 48 | 373.75 | 793 | 1,362 |
| 371.20 | 793 | 63 | 373.80 | 793 | 1,381 |
| 371.25 | 793 | 79 | 373.85 | 793 | 1,398 |
| 371.30 | 793 | 95 | 373.90 | 793 | 1,415 |
| 371.35 | 793 | 111 | 373.95 | 793 | 1,432 |
| 371.40 | 793 | 127 | 374.00 | 793 | 1,448 |
| 371.45 | 793 | 143 | 374.05 | 793 | 1,463 |
| 371.50 | 793 | 159 | 374.10 | 793 | 1,479 |
| 371.55 | 793 | 189 | 374.15 | 793 | 1,495 |
| 371.60 | 793 | 219 | 374.20 | 793 | 1,511 |
| 371.65 | 793 | 249 | 374.25 | 793 | 1,527 |
| 371.70 | 793 | 279 | 374.30 | 793 | 1,543 |
| 371.75 | 793 | 309 | 374.35 | 793 | 1,559 |
| 371.80 | 793 | 339 | 374.40 | 793 | 1,574 |
| 371.85 | 793 | 369 | 374.45 | 793 | 1,590 |
| 371.90 | 793 | 398 | 374.50 | 793 | 1,606 |
| 371.95 | 793 | 428 | 374.55 | 793 | 1,606 |
| 372.00 | 793 | 457 | 374.60 | 793 | 1,606 |
| 372.05 | 793 | 487 | 374.65 | 793 | 1,606 |
| 372.10 | 793 | 516 | 374.70 | 793 | 1,606 |
| 372.15 | 793 | 545 | 374.75 | 793 | 1,606 |
| 372.20 | 793 | 574 | 374.80 | 793 | 1,606 |
| 372.25 | 793 | 603 | | | |
| 372.30 | 793 | 631 | | | |
| 372.35 | 793 | 660 | | | |
| 372.40 | 793 | 688 | | | |
| 372.45 | 793 | 717 | | | |
| 372.50 | 793 | 745 | | | |
| 372.55 | 793 | 773 | | | |
| 372.60 | 793 | 800 | | | |
| 372.65 | 793 | 828 | | | |
| 372.70 | 793 | 855 | | | |
| 372.75 | 793 | 882 | | | |
| 372.80 | 793 | 909 | | | |
| 372.85 | 793 | 936 | | | |
| 372.90 | 793 | 962 | | | |
| 372.95 | 793 | 989 | | | |
| 373.00 | 793 | 1,015 | | | |
| 373.05 | 793 | 1,041 | | | |
| 373.10 | 793 | 1,066 | | | |
| 373.15 | 793 | 1,091 | | | |
| 373.20 | 793 | 1,116 | | | |
| 373.25 | 793 | 1,141 | | | |
| 373.30 | 793 | 1,165 | | | |
| 373.35 | 793 | 1,189 | | | |
| 373.40 | 793 | 1,212 | | | |
| 373.45 | 793 | 1,235 | | | |
| 373.50 | 793 | 1,258 | | | |
| 373.55 | 793 | 1,280 | | | |

Summary for Pond 2P: Infiltration Chamber 2

Inflow Area = 1.440 ac, 84.03% Impervious, Inflow Depth > 3.47" for 10-YR event
 Inflow = 5.90 cfs @ 12.09 hrs, Volume= 0.416 af
 Outflow = 0.99 cfs @ 11.70 hrs, Volume= 0.416 af, Atten= 83%, Lag= 0.0 min
 Discarded = 0.99 cfs @ 11.70 hrs, Volume= 0.416 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.39' @ 12.57 hrs Surf.Area= 5,154 sf Storage= 5,460 cf

Plug-Flow detention time= 36.0 min calculated for 0.415 af (100% of inflow)
 Center-of-Mass det. time= 35.5 min (799.9 - 764.4)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 7,573 cf | 47.25'W x 109.08'L x 5.50'H Field A 28,347 cf Overall - 9,415 cf Embedded = 18,932 cf x 40.0% Voids |
| #2A | 370.45' | 9,415 cf | ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 84 Chambers in 6 Rows Cap Storage= +14.9 cf x 2 x 6 rows = 178.8 cf |
| | | 16,988 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 373.00' | 12.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 373.00' / 372.20' S= 0.0143 '/ Cc= 0.900 n= 0.011, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.99 cfs @ 11.70 hrs HW=369.76' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)
 ↑2=Culvert (Controls 0.00 cfs)

Stage-Area-Storage for Pond 2P: Infiltration Chamber 2

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 5,154 | 0 | 374.90 | 5,154 | 16,369 |
| 369.80 | 5,154 | 206 | 375.00 | 5,154 | 16,575 |
| 369.90 | 5,154 | 412 | 375.10 | 5,154 | 16,782 |
| 370.00 | 5,154 | 618 | 375.20 | 5,154 | 16,988 |
| 370.10 | 5,154 | 825 | | | |
| 370.20 | 5,154 | 1,031 | | | |
| 370.30 | 5,154 | 1,237 | | | |
| 370.40 | 5,154 | 1,443 | | | |
| 370.50 | 5,154 | 1,757 | | | |
| 370.60 | 5,154 | 2,178 | | | |
| 370.70 | 5,154 | 2,598 | | | |
| 370.80 | 5,154 | 3,016 | | | |
| 370.90 | 5,154 | 3,432 | | | |
| 371.00 | 5,154 | 3,847 | | | |
| 371.10 | 5,154 | 4,259 | | | |
| 371.20 | 5,154 | 4,670 | | | |
| 371.30 | 5,154 | 5,079 | | | |
| 371.40 | 5,154 | 5,486 | | | |
| 371.50 | 5,154 | 5,891 | | | |
| 371.60 | 5,154 | 6,293 | | | |
| 371.70 | 5,154 | 6,692 | | | |
| 371.80 | 5,154 | 7,089 | | | |
| 371.90 | 5,154 | 7,483 | | | |
| 372.00 | 5,154 | 7,873 | | | |
| 372.10 | 5,154 | 8,260 | | | |
| 372.20 | 5,154 | 8,644 | | | |
| 372.30 | 5,154 | 9,024 | | | |
| 372.40 | 5,154 | 9,400 | | | |
| 372.50 | 5,154 | 9,772 | | | |
| 372.60 | 5,154 | 10,139 | | | |
| 372.70 | 5,154 | 10,502 | | | |
| 372.80 | 5,154 | 10,859 | | | |
| 372.90 | 5,154 | 11,211 | | | |
| 373.00 | 5,154 | 11,557 | | | |
| 373.10 | 5,154 | 11,896 | | | |
| 373.20 | 5,154 | 12,229 | | | |
| 373.30 | 5,154 | 12,554 | | | |
| 373.40 | 5,154 | 12,870 | | | |
| 373.50 | 5,154 | 13,177 | | | |
| 373.60 | 5,154 | 13,474 | | | |
| 373.70 | 5,154 | 13,757 | | | |
| 373.80 | 5,154 | 14,023 | | | |
| 373.90 | 5,154 | 14,267 | | | |
| 374.00 | 5,154 | 14,496 | | | |
| 374.10 | 5,154 | 14,715 | | | |
| 374.20 | 5,154 | 14,926 | | | |
| 374.30 | 5,154 | 15,132 | | | |
| 374.40 | 5,154 | 15,338 | | | |
| 374.50 | 5,154 | 15,545 | | | |
| 374.60 | 5,154 | 15,751 | | | |
| 374.70 | 5,154 | 15,957 | | | |
| 374.80 | 5,154 | 16,163 | | | |

Summary for Pond 3P: Infiltration Chamber 3

Inflow Area = 0.090 ac, 100.00% Impervious, Inflow Depth > 4.33" for 10-YR event
 Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.032 af
 Outflow = 0.08 cfs @ 11.75 hrs, Volume= 0.032 af, Atten= 80%, Lag= 0.0 min
 Discarded = 0.08 cfs @ 11.75 hrs, Volume= 0.032 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.07' @ 12.52 hrs Surf.Area= 431 sf Storage= 366 cf

Plug-Flow detention time= 26.2 min calculated for 0.032 af (100% of inflow)
 Center-of-Mass det. time= 25.4 min (760.6 - 735.2)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 420 cf | 11.00'W x 39.22'L x 3.50'H Field A 1,510 cf Overall - 459 cf Embedded = 1,050 cf x 40.0% Voids |
| #2A | 370.20' | 459 cf | ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 10 Chambers in 2 Rows |
| #3 | 373.20' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 887 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.20 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 379.50' | 4.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.08 cfs @ 11.75 hrs HW=369.82' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Infiltration Chamber 3

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 431 | 0 | 377.50 | 432 | 884 |
| 369.85 | 431 | 26 | 377.65 | 432 | 884 |
| 370.00 | 431 | 52 | 377.80 | 432 | 884 |
| 370.15 | 431 | 78 | 377.95 | 432 | 884 |
| 370.30 | 431 | 119 | 378.10 | 432 | 884 |
| 370.45 | 431 | 169 | 378.25 | 432 | 885 |
| 370.60 | 431 | 218 | 378.40 | 432 | 885 |
| 370.75 | 431 | 266 | 378.55 | 432 | 885 |
| 370.90 | 431 | 314 | 378.70 | 432 | 885 |
| 371.05 | 431 | 362 | 378.85 | 432 | 885 |
| 371.20 | 431 | 408 | 379.00 | 432 | 885 |
| 371.35 | 431 | 454 | 379.15 | 432 | 886 |
| 371.50 | 431 | 499 | 379.30 | 432 | 886 |
| 371.65 | 431 | 542 | 379.45 | 432 | 886 |
| 371.80 | 431 | 585 | 379.60 | 432 | 886 |
| 371.95 | 431 | 626 | 379.75 | 432 | 886 |
| 372.10 | 431 | 665 | 379.90 | 432 | 886 |
| 372.25 | 431 | 702 | 380.05 | 432 | 886 |
| 372.40 | 431 | 736 | 380.20 | 432 | 887 |
| 372.55 | 431 | 766 | 380.35 | 432 | 887 |
| 372.70 | 431 | 793 | 380.50 | 432 | 887 |
| 372.85 | 431 | 819 | | | |
| 373.00 | 431 | 845 | | | |
| 373.15 | 431 | 871 | | | |
| 373.30 | 432 | 880 | | | |
| 373.45 | 432 | 880 | | | |
| 373.60 | 432 | 880 | | | |
| 373.75 | 432 | 880 | | | |
| 373.90 | 432 | 880 | | | |
| 374.05 | 432 | 880 | | | |
| 374.20 | 432 | 881 | | | |
| 374.35 | 432 | 881 | | | |
| 374.50 | 432 | 881 | | | |
| 374.65 | 432 | 881 | | | |
| 374.80 | 432 | 881 | | | |
| 374.95 | 432 | 881 | | | |
| 375.10 | 432 | 881 | | | |
| 375.25 | 432 | 882 | | | |
| 375.40 | 432 | 882 | | | |
| 375.55 | 432 | 882 | | | |
| 375.70 | 432 | 882 | | | |
| 375.85 | 432 | 882 | | | |
| 376.00 | 432 | 882 | | | |
| 376.15 | 432 | 883 | | | |
| 376.30 | 432 | 883 | | | |
| 376.45 | 432 | 883 | | | |
| 376.60 | 432 | 883 | | | |
| 376.75 | 432 | 883 | | | |
| 376.90 | 432 | 883 | | | |
| 377.05 | 432 | 883 | | | |
| 377.20 | 432 | 884 | | | |
| 377.35 | 432 | 884 | | | |

Summary for Pond 4P: Infiltration Chamber 4

Inflow Area = 0.230 ac, 100.00% Impervious, Inflow Depth > 4.33" for 10-YR event
 Inflow = 1.08 cfs @ 12.09 hrs, Volume= 0.083 af
 Outflow = 0.20 cfs @ 11.75 hrs, Volume= 0.083 af, Atten= 81%, Lag= 0.0 min
 Discarded = 0.20 cfs @ 11.75 hrs, Volume= 0.083 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.39' @ 12.52 hrs Surf.Area= 1,066 sf Storage= 955 cf

Plug-Flow detention time= 27.5 min calculated for 0.083 af (100% of inflow)
 Center-of-Mass det. time= 27.0 min (762.3 - 735.2)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 370.00' | 997 cf | 15.75'W x 67.70'L x 3.50'H Field A 3,732 cf Overall - 1,240 cf Embedded = 2,491 cf x 40.0% Voids |
| #2A | 370.50' | 1,240 cf | ADS_StormTech SC-740 +Cap x 27 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 27 Chambers in 3 Rows |
| #3 | 373.50' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 2,244 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 373.50 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 370.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 372.50' | 4.0" Horiz. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.20 cfs @ 11.75 hrs HW=370.13' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=370.00' (Free Discharge)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 4P: Infiltration Chamber 4

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 370.00 | 1,066 | 0 | 377.80 | 1,067 | 2,241 |
| 370.15 | 1,066 | 64 | 377.95 | 1,067 | 2,241 |
| 370.30 | 1,066 | 128 | 378.10 | 1,067 | 2,242 |
| 370.45 | 1,066 | 192 | 378.25 | 1,067 | 2,242 |
| 370.60 | 1,066 | 299 | 378.40 | 1,067 | 2,242 |
| 370.75 | 1,066 | 426 | 378.55 | 1,067 | 2,242 |
| 370.90 | 1,066 | 553 | 378.70 | 1,067 | 2,242 |
| 371.05 | 1,066 | 678 | 378.85 | 1,067 | 2,242 |
| 371.20 | 1,066 | 802 | 379.00 | 1,067 | 2,242 |
| 371.35 | 1,066 | 923 | 379.15 | 1,067 | 2,243 |
| 371.50 | 1,066 | 1,043 | 379.30 | 1,067 | 2,243 |
| 371.65 | 1,066 | 1,160 | 379.45 | 1,067 | 2,243 |
| 371.80 | 1,066 | 1,275 | 379.60 | 1,067 | 2,243 |
| 371.95 | 1,066 | 1,387 | 379.75 | 1,067 | 2,243 |
| 372.10 | 1,066 | 1,496 | 379.90 | 1,067 | 2,243 |
| 372.25 | 1,066 | 1,600 | 380.05 | 1,067 | 2,243 |
| 372.40 | 1,066 | 1,700 | 380.20 | 1,067 | 2,244 |
| 372.55 | 1,066 | 1,795 | 380.35 | 1,067 | 2,244 |
| 372.70 | 1,066 | 1,882 | 380.50 | 1,067 | 2,244 |
| 372.85 | 1,066 | 1,957 | | | |
| 373.00 | 1,066 | 2,024 | | | |
| 373.15 | 1,066 | 2,088 | | | |
| 373.30 | 1,066 | 2,152 | | | |
| 373.45 | 1,066 | 2,216 | | | |
| 373.60 | 1,067 | 2,237 | | | |
| 373.75 | 1,067 | 2,237 | | | |
| 373.90 | 1,067 | 2,237 | | | |
| 374.05 | 1,067 | 2,237 | | | |
| 374.20 | 1,067 | 2,238 | | | |
| 374.35 | 1,067 | 2,238 | | | |
| 374.50 | 1,067 | 2,238 | | | |
| 374.65 | 1,067 | 2,238 | | | |
| 374.80 | 1,067 | 2,238 | | | |
| 374.95 | 1,067 | 2,238 | | | |
| 375.10 | 1,067 | 2,239 | | | |
| 375.25 | 1,067 | 2,239 | | | |
| 375.40 | 1,067 | 2,239 | | | |
| 375.55 | 1,067 | 2,239 | | | |
| 375.70 | 1,067 | 2,239 | | | |
| 375.85 | 1,067 | 2,239 | | | |
| 376.00 | 1,067 | 2,239 | | | |
| 376.15 | 1,067 | 2,240 | | | |
| 376.30 | 1,067 | 2,240 | | | |
| 376.45 | 1,067 | 2,240 | | | |
| 376.60 | 1,067 | 2,240 | | | |
| 376.75 | 1,067 | 2,240 | | | |
| 376.90 | 1,067 | 2,240 | | | |
| 377.05 | 1,067 | 2,240 | | | |
| 377.20 | 1,067 | 2,241 | | | |
| 377.35 | 1,067 | 2,241 | | | |
| 377.50 | 1,067 | 2,241 | | | |
| 377.65 | 1,067 | 2,241 | | | |

G-611-POST

Type III 24-hr 25-YR Rainfall=6.10"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Entrance Runoff Area=0.160 ac 43.75% Impervious Runoff Depth>2.23"
 Flow Length=153' Tc=6.0 min CN=65 Runoff=0.44 cfs 0.030 af

Subcatchment P2: Parking/Front Building Runoff Area=1.440 ac 84.03% Impervious Runoff Depth>4.57"
 Flow Length=153' Tc=6.0 min CN=89 Runoff=7.65 cfs 0.548 af

Subcatchment P3: Rear Building Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>5.42"
 Flow Length=130' Tc=6.0 min CN=98 Runoff=0.53 cfs 0.041 af

Subcatchment P4: Right Building Runoff Area=0.230 ac 100.00% Impervious Runoff Depth>5.42"
 Flow Length=260' Tc=6.0 min CN=98 Runoff=1.34 cfs 0.104 af

Subcatchment P5: Lawn Runoff Area=0.700 ac 1.43% Impervious Runoff Depth>0.45"
 Flow Length=226' Tc=7.7 min CN=40 Runoff=0.16 cfs 0.026 af

Reach 1R: Canal Street Inflow=0.00 cfs 0.000 af
 Outflow=0.00 cfs 0.000 af

Reach 2R: North Property Line Inflow=0.16 cfs 0.026 af
 Outflow=0.16 cfs 0.026 af

Pond 1P: Infiltration Chamber 1 Peak Elev=371.60' Storage=218 cf Inflow=0.44 cfs 0.030 af
 Discarded=0.15 cfs 0.030 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.030 af

Pond 2P: Infiltration Chamber 2 Peak Elev=372.05' Storage=8,084 cf Inflow=7.65 cfs 0.548 af
 Discarded=0.99 cfs 0.548 af Primary=0.00 cfs 0.000 af Outflow=0.99 cfs 0.548 af

Pond 3P: Infiltration Chamber 3 Peak Elev=371.57' Storage=519 cf Inflow=0.53 cfs 0.041 af
 Discarded=0.08 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.041 af

Pond 4P: Infiltration Chamber 4 Peak Elev=371.90' Storage=1,349 cf Inflow=1.34 cfs 0.104 af
 Discarded=0.20 cfs 0.104 af Primary=0.00 cfs 0.000 af Outflow=0.20 cfs 0.104 af

Total Runoff Area = 2.620 ac Runoff Volume = 0.749 af Average Runoff Depth = 3.43"
38.55% Pervious = 1.010 ac 61.45% Impervious = 1.610 ac

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Summary for Subcatchment P1: Entrance

Runoff = 0.44 cfs @ 12.10 hrs, Volume= 0.030 af, Depth> 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.10"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 0.070 | 98 | Impervious |
| * 0.090 | 39 | Lawn, Good, HSG A |
| 0.160 | 65 | Weighted Average |
| 0.090 | | 56.25% Pervious Area |
| 0.070 | | 43.75% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P2: Parking/Front Building

Runoff = 7.65 cfs @ 12.09 hrs, Volume= 0.548 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.10"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 1.210 | 98 | Impervious |
| * 0.230 | 39 | Lawn, Good, HSG A |
| 1.440 | 89 | Weighted Average |
| 0.230 | | 15.97% Pervious Area |
| 1.210 | | 84.03% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P3: Rear Building

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.041 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.10"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.090 | 98 | Impervious |
| 0.090 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 130 | | 0.36 | | Direct Entry, Segment 1 |

Summary for Subcatchment P4: Right Building

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.104 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.10"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.230 | 98 | Impervious |
| 0.230 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 260 | | 0.72 | | Direct Entry, Segment 1 |

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Summary for Subcatchment P5: Lawn

Runoff = 0.16 cfs @ 12.34 hrs, Volume= 0.026 af, Depth> 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.10"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| * 0.010 | 98 | Impervious |
| * 0.690 | 39 | Lawn, Good, HSG A |
| 0.700 | 40 | Weighted Average |
| 0.690 | | 98.57% Pervious Area |
| 0.010 | | 1.43% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.8 | 50 | 0.0200 | 0.14 | | Sheet Flow, Segment 1 |
| | | | | | Grass: Short n= 0.150 P2= 3.00" |
| 1.9 | 176 | 0.0510 | 1.58 | | Shallow Concentrated Flow, Segment 2 |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 226 | Total | | | |

Summary for Reach 1R: Canal Street

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: North Property Line

Inflow Area = 2.460 ac, 62.60% Impervious, Inflow Depth > 0.13" for 25-YR event
Inflow = 0.16 cfs @ 12.34 hrs, Volume= 0.026 af
Outflow = 0.16 cfs @ 12.34 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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Summary for Pond 1P: Infiltration Chamber 1

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth > 2.23" for 25-YR event
 Inflow = 0.44 cfs @ 12.10 hrs, Volume= 0.030 af
 Outflow = 0.15 cfs @ 12.00 hrs, Volume= 0.030 af, Atten= 65%, Lag= 0.0 min
 Discarded = 0.15 cfs @ 12.00 hrs, Volume= 0.030 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.60' @ 12.43 hrs Surf.Area= 793 sf Storage= 218 cf

Plug-Flow detention time= 8.4 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time= 7.9 min (816.5 - 808.7)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 371.00' | 779 cf | 16.75'W x 47.34'L x 3.50'H Field A 2,775 cf Overall - 827 cf Embedded = 1,948 cf x 40.0% Voids |
| #2A | 371.50' | 827 cf | ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows |
| | | 1,606 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 371.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 374.17' | 8.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 374.17' / 374.07' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf |

Discarded OutFlow Max=0.15 cfs @ 12.00 hrs HW=371.07' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)

↑2=Culvert (Controls 0.00 cfs)

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Stage-Area-Storage for Pond 1P: Infiltration Chamber 1

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 371.00 | 793 | 0 | 373.60 | 793 | 1,302 |
| 371.05 | 793 | 16 | 373.65 | 793 | 1,323 |
| 371.10 | 793 | 32 | 373.70 | 793 | 1,343 |
| 371.15 | 793 | 48 | 373.75 | 793 | 1,362 |
| 371.20 | 793 | 63 | 373.80 | 793 | 1,381 |
| 371.25 | 793 | 79 | 373.85 | 793 | 1,398 |
| 371.30 | 793 | 95 | 373.90 | 793 | 1,415 |
| 371.35 | 793 | 111 | 373.95 | 793 | 1,432 |
| 371.40 | 793 | 127 | 374.00 | 793 | 1,448 |
| 371.45 | 793 | 143 | 374.05 | 793 | 1,463 |
| 371.50 | 793 | 159 | 374.10 | 793 | 1,479 |
| 371.55 | 793 | 189 | 374.15 | 793 | 1,495 |
| 371.60 | 793 | 219 | 374.20 | 793 | 1,511 |
| 371.65 | 793 | 249 | 374.25 | 793 | 1,527 |
| 371.70 | 793 | 279 | 374.30 | 793 | 1,543 |
| 371.75 | 793 | 309 | 374.35 | 793 | 1,559 |
| 371.80 | 793 | 339 | 374.40 | 793 | 1,574 |
| 371.85 | 793 | 369 | 374.45 | 793 | 1,590 |
| 371.90 | 793 | 398 | 374.50 | 793 | 1,606 |
| 371.95 | 793 | 428 | 374.55 | 793 | 1,606 |
| 372.00 | 793 | 457 | 374.60 | 793 | 1,606 |
| 372.05 | 793 | 487 | 374.65 | 793 | 1,606 |
| 372.10 | 793 | 516 | 374.70 | 793 | 1,606 |
| 372.15 | 793 | 545 | 374.75 | 793 | 1,606 |
| 372.20 | 793 | 574 | 374.80 | 793 | 1,606 |
| 372.25 | 793 | 603 | | | |
| 372.30 | 793 | 631 | | | |
| 372.35 | 793 | 660 | | | |
| 372.40 | 793 | 688 | | | |
| 372.45 | 793 | 717 | | | |
| 372.50 | 793 | 745 | | | |
| 372.55 | 793 | 773 | | | |
| 372.60 | 793 | 800 | | | |
| 372.65 | 793 | 828 | | | |
| 372.70 | 793 | 855 | | | |
| 372.75 | 793 | 882 | | | |
| 372.80 | 793 | 909 | | | |
| 372.85 | 793 | 936 | | | |
| 372.90 | 793 | 962 | | | |
| 372.95 | 793 | 989 | | | |
| 373.00 | 793 | 1,015 | | | |
| 373.05 | 793 | 1,041 | | | |
| 373.10 | 793 | 1,066 | | | |
| 373.15 | 793 | 1,091 | | | |
| 373.20 | 793 | 1,116 | | | |
| 373.25 | 793 | 1,141 | | | |
| 373.30 | 793 | 1,165 | | | |
| 373.35 | 793 | 1,189 | | | |
| 373.40 | 793 | 1,212 | | | |
| 373.45 | 793 | 1,235 | | | |
| 373.50 | 793 | 1,258 | | | |
| 373.55 | 793 | 1,280 | | | |

Summary for Pond 2P: Infiltration Chamber 2

Inflow Area = 1.440 ac, 84.03% Impervious, Inflow Depth > 4.57" for 25-YR event
 Inflow = 7.65 cfs @ 12.09 hrs, Volume= 0.548 af
 Outflow = 0.99 cfs @ 11.65 hrs, Volume= 0.548 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.99 cfs @ 11.65 hrs, Volume= 0.548 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 372.05' @ 12.65 hrs Surf.Area= 5,154 sf Storage= 8,084 cf

Plug-Flow detention time= 57.9 min calculated for 0.548 af (100% of inflow)
 Center-of-Mass det. time= 57.7 min (816.1 - 758.4)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 7,573 cf | 47.25'W x 109.08'L x 5.50'H Field A 28,347 cf Overall - 9,415 cf Embedded = 18,932 cf x 40.0% Voids |
| #2A | 370.45' | 9,415 cf | ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 84 Chambers in 6 Rows Cap Storage= +14.9 cf x 2 x 6 rows = 178.8 cf |
| | | 16,988 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 373.00' | 12.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 373.00' / 372.20' S= 0.0143 '/ Cc= 0.900 n= 0.011, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.99 cfs @ 11.65 hrs HW=369.76' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)
 ↑2=Culvert (Controls 0.00 cfs)

Stage-Area-Storage for Pond 2P: Infiltration Chamber 2

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 5,154 | 0 | 374.90 | 5,154 | 16,369 |
| 369.80 | 5,154 | 206 | 375.00 | 5,154 | 16,575 |
| 369.90 | 5,154 | 412 | 375.10 | 5,154 | 16,782 |
| 370.00 | 5,154 | 618 | 375.20 | 5,154 | 16,988 |
| 370.10 | 5,154 | 825 | | | |
| 370.20 | 5,154 | 1,031 | | | |
| 370.30 | 5,154 | 1,237 | | | |
| 370.40 | 5,154 | 1,443 | | | |
| 370.50 | 5,154 | 1,757 | | | |
| 370.60 | 5,154 | 2,178 | | | |
| 370.70 | 5,154 | 2,598 | | | |
| 370.80 | 5,154 | 3,016 | | | |
| 370.90 | 5,154 | 3,432 | | | |
| 371.00 | 5,154 | 3,847 | | | |
| 371.10 | 5,154 | 4,259 | | | |
| 371.20 | 5,154 | 4,670 | | | |
| 371.30 | 5,154 | 5,079 | | | |
| 371.40 | 5,154 | 5,486 | | | |
| 371.50 | 5,154 | 5,891 | | | |
| 371.60 | 5,154 | 6,293 | | | |
| 371.70 | 5,154 | 6,692 | | | |
| 371.80 | 5,154 | 7,089 | | | |
| 371.90 | 5,154 | 7,483 | | | |
| 372.00 | 5,154 | 7,873 | | | |
| 372.10 | 5,154 | 8,260 | | | |
| 372.20 | 5,154 | 8,644 | | | |
| 372.30 | 5,154 | 9,024 | | | |
| 372.40 | 5,154 | 9,400 | | | |
| 372.50 | 5,154 | 9,772 | | | |
| 372.60 | 5,154 | 10,139 | | | |
| 372.70 | 5,154 | 10,502 | | | |
| 372.80 | 5,154 | 10,859 | | | |
| 372.90 | 5,154 | 11,211 | | | |
| 373.00 | 5,154 | 11,557 | | | |
| 373.10 | 5,154 | 11,896 | | | |
| 373.20 | 5,154 | 12,229 | | | |
| 373.30 | 5,154 | 12,554 | | | |
| 373.40 | 5,154 | 12,870 | | | |
| 373.50 | 5,154 | 13,177 | | | |
| 373.60 | 5,154 | 13,474 | | | |
| 373.70 | 5,154 | 13,757 | | | |
| 373.80 | 5,154 | 14,023 | | | |
| 373.90 | 5,154 | 14,267 | | | |
| 374.00 | 5,154 | 14,496 | | | |
| 374.10 | 5,154 | 14,715 | | | |
| 374.20 | 5,154 | 14,926 | | | |
| 374.30 | 5,154 | 15,132 | | | |
| 374.40 | 5,154 | 15,338 | | | |
| 374.50 | 5,154 | 15,545 | | | |
| 374.60 | 5,154 | 15,751 | | | |
| 374.70 | 5,154 | 15,957 | | | |
| 374.80 | 5,154 | 16,163 | | | |

G-611-POST

Type III 24-hr 25-YR Rainfall=6.10"

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Summary for Pond 3P: Infiltration Chamber 3

Inflow Area = 0.090 ac, 100.00% Impervious, Inflow Depth > 5.42" for 25-YR event
 Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.041 af
 Outflow = 0.08 cfs @ 11.70 hrs, Volume= 0.041 af, Atten= 84%, Lag= 0.0 min
 Discarded = 0.08 cfs @ 11.70 hrs, Volume= 0.041 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 371.57' @ 12.57 hrs Surf.Area= 431 sf Storage= 519 cf

Plug-Flow detention time= 39.2 min calculated for 0.040 af (100% of inflow)

Center-of-Mass det. time= 38.4 min (772.5 - 734.1)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 420 cf | 11.00'W x 39.22'L x 3.50'H Field A 1,510 cf Overall - 459 cf Embedded = 1,050 cf x 40.0% Voids |
| #2A | 370.20' | 459 cf | ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 10 Chambers in 2 Rows |
| #3 | 373.20' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 887 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.20 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 379.50' | 4.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.08 cfs @ 11.70 hrs HW=369.83' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)

↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Infiltration Chamber 3

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 431 | 0 | 377.50 | 432 | 884 |
| 369.85 | 431 | 26 | 377.65 | 432 | 884 |
| 370.00 | 431 | 52 | 377.80 | 432 | 884 |
| 370.15 | 431 | 78 | 377.95 | 432 | 884 |
| 370.30 | 431 | 119 | 378.10 | 432 | 884 |
| 370.45 | 431 | 169 | 378.25 | 432 | 885 |
| 370.60 | 431 | 218 | 378.40 | 432 | 885 |
| 370.75 | 431 | 266 | 378.55 | 432 | 885 |
| 370.90 | 431 | 314 | 378.70 | 432 | 885 |
| 371.05 | 431 | 362 | 378.85 | 432 | 885 |
| 371.20 | 431 | 408 | 379.00 | 432 | 885 |
| 371.35 | 431 | 454 | 379.15 | 432 | 886 |
| 371.50 | 431 | 499 | 379.30 | 432 | 886 |
| 371.65 | 431 | 542 | 379.45 | 432 | 886 |
| 371.80 | 431 | 585 | 379.60 | 432 | 886 |
| 371.95 | 431 | 626 | 379.75 | 432 | 886 |
| 372.10 | 431 | 665 | 379.90 | 432 | 886 |
| 372.25 | 431 | 702 | 380.05 | 432 | 886 |
| 372.40 | 431 | 736 | 380.20 | 432 | 887 |
| 372.55 | 431 | 766 | 380.35 | 432 | 887 |
| 372.70 | 431 | 793 | 380.50 | 432 | 887 |
| 372.85 | 431 | 819 | | | |
| 373.00 | 431 | 845 | | | |
| 373.15 | 431 | 871 | | | |
| 373.30 | 432 | 880 | | | |
| 373.45 | 432 | 880 | | | |
| 373.60 | 432 | 880 | | | |
| 373.75 | 432 | 880 | | | |
| 373.90 | 432 | 880 | | | |
| 374.05 | 432 | 880 | | | |
| 374.20 | 432 | 881 | | | |
| 374.35 | 432 | 881 | | | |
| 374.50 | 432 | 881 | | | |
| 374.65 | 432 | 881 | | | |
| 374.80 | 432 | 881 | | | |
| 374.95 | 432 | 881 | | | |
| 375.10 | 432 | 881 | | | |
| 375.25 | 432 | 882 | | | |
| 375.40 | 432 | 882 | | | |
| 375.55 | 432 | 882 | | | |
| 375.70 | 432 | 882 | | | |
| 375.85 | 432 | 882 | | | |
| 376.00 | 432 | 882 | | | |
| 376.15 | 432 | 883 | | | |
| 376.30 | 432 | 883 | | | |
| 376.45 | 432 | 883 | | | |
| 376.60 | 432 | 883 | | | |
| 376.75 | 432 | 883 | | | |
| 376.90 | 432 | 883 | | | |
| 377.05 | 432 | 883 | | | |
| 377.20 | 432 | 884 | | | |
| 377.35 | 432 | 884 | | | |

Summary for Pond 4P: Infiltration Chamber 4

Inflow Area = 0.230 ac, 100.00% Impervious, Inflow Depth > 5.42" for 25-YR event
 Inflow = 1.34 cfs @ 12.09 hrs, Volume= 0.104 af
 Outflow = 0.20 cfs @ 11.70 hrs, Volume= 0.104 af, Atten= 85%, Lag= 0.0 min
 Discarded = 0.20 cfs @ 11.70 hrs, Volume= 0.104 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 371.90' @ 12.57 hrs Surf.Area= 1,066 sf Storage= 1,349 cf

Plug-Flow detention time= 41.4 min calculated for 0.104 af (100% of inflow)
 Center-of-Mass det. time= 40.7 min (774.8 - 734.1)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 370.00' | 997 cf | 15.75'W x 67.70'L x 3.50'H Field A 3,732 cf Overall - 1,240 cf Embedded = 2,491 cf x 40.0% Voids |
| #2A | 370.50' | 1,240 cf | ADS_StormTech SC-740 +Cap x 27 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 27 Chambers in 3 Rows |
| #3 | 373.50' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 2,244 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.50 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 370.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 372.50' | 4.0" Horiz. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.20 cfs @ 11.70 hrs HW=370.13' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=370.00' (Free Discharge)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 4P: Infiltration Chamber 4

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 370.00 | 1,066 | 0 | 377.80 | 1,067 | 2,241 |
| 370.15 | 1,066 | 64 | 377.95 | 1,067 | 2,241 |
| 370.30 | 1,066 | 128 | 378.10 | 1,067 | 2,242 |
| 370.45 | 1,066 | 192 | 378.25 | 1,067 | 2,242 |
| 370.60 | 1,066 | 299 | 378.40 | 1,067 | 2,242 |
| 370.75 | 1,066 | 426 | 378.55 | 1,067 | 2,242 |
| 370.90 | 1,066 | 553 | 378.70 | 1,067 | 2,242 |
| 371.05 | 1,066 | 678 | 378.85 | 1,067 | 2,242 |
| 371.20 | 1,066 | 802 | 379.00 | 1,067 | 2,242 |
| 371.35 | 1,066 | 923 | 379.15 | 1,067 | 2,243 |
| 371.50 | 1,066 | 1,043 | 379.30 | 1,067 | 2,243 |
| 371.65 | 1,066 | 1,160 | 379.45 | 1,067 | 2,243 |
| 371.80 | 1,066 | 1,275 | 379.60 | 1,067 | 2,243 |
| 371.95 | 1,066 | 1,387 | 379.75 | 1,067 | 2,243 |
| 372.10 | 1,066 | 1,496 | 379.90 | 1,067 | 2,243 |
| 372.25 | 1,066 | 1,600 | 380.05 | 1,067 | 2,243 |
| 372.40 | 1,066 | 1,700 | 380.20 | 1,067 | 2,244 |
| 372.55 | 1,066 | 1,795 | 380.35 | 1,067 | 2,244 |
| 372.70 | 1,066 | 1,882 | 380.50 | 1,067 | 2,244 |
| 372.85 | 1,066 | 1,957 | | | |
| 373.00 | 1,066 | 2,024 | | | |
| 373.15 | 1,066 | 2,088 | | | |
| 373.30 | 1,066 | 2,152 | | | |
| 373.45 | 1,066 | 2,216 | | | |
| 373.60 | 1,067 | 2,237 | | | |
| 373.75 | 1,067 | 2,237 | | | |
| 373.90 | 1,067 | 2,237 | | | |
| 374.05 | 1,067 | 2,237 | | | |
| 374.20 | 1,067 | 2,238 | | | |
| 374.35 | 1,067 | 2,238 | | | |
| 374.50 | 1,067 | 2,238 | | | |
| 374.65 | 1,067 | 2,238 | | | |
| 374.80 | 1,067 | 2,238 | | | |
| 374.95 | 1,067 | 2,238 | | | |
| 375.10 | 1,067 | 2,239 | | | |
| 375.25 | 1,067 | 2,239 | | | |
| 375.40 | 1,067 | 2,239 | | | |
| 375.55 | 1,067 | 2,239 | | | |
| 375.70 | 1,067 | 2,239 | | | |
| 375.85 | 1,067 | 2,239 | | | |
| 376.00 | 1,067 | 2,239 | | | |
| 376.15 | 1,067 | 2,240 | | | |
| 376.30 | 1,067 | 2,240 | | | |
| 376.45 | 1,067 | 2,240 | | | |
| 376.60 | 1,067 | 2,240 | | | |
| 376.75 | 1,067 | 2,240 | | | |
| 376.90 | 1,067 | 2,240 | | | |
| 377.05 | 1,067 | 2,240 | | | |
| 377.20 | 1,067 | 2,241 | | | |
| 377.35 | 1,067 | 2,241 | | | |
| 377.50 | 1,067 | 2,241 | | | |
| 377.65 | 1,067 | 2,241 | | | |

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Type III 24-hr 100-YR Rainfall=8.50"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment P1: Entrance | Runoff Area=0.160 ac 43.75% Impervious Runoff Depth>4.00" Flow Length=153' Tc=6.0 min CN=65 Runoff=0.79 cfs 0.053 af |
| Subcatchment P2: Parking/Front Building | Runoff Area=1.440 ac 84.03% Impervious Runoff Depth>6.78" Flow Length=153' Tc=6.0 min CN=89 Runoff=11.10 cfs 0.813 af |
| Subcatchment P3: Rear Building | Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>7.60" Flow Length=130' Tc=6.0 min CN=98 Runoff=0.73 cfs 0.057 af |
| Subcatchment P4: Right Building | Runoff Area=0.230 ac 100.00% Impervious Runoff Depth>7.60" Flow Length=260' Tc=6.0 min CN=98 Runoff=1.87 cfs 0.146 af |
| Subcatchment P5: Lawn | Runoff Area=0.700 ac 1.43% Impervious Runoff Depth>1.30" Flow Length=226' Tc=7.7 min CN=40 Runoff=0.83 cfs 0.076 af |
| Reach 1R: Canal Street | Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af |
| Reach 2R: North Property Line | Inflow=1.30 cfs 0.122 af Outflow=1.30 cfs 0.122 af |
| Pond 1P: Infiltration Chamber 1 | Peak Elev=372.35' Storage=660 cf Inflow=0.79 cfs 0.053 af Discarded=0.15 cfs 0.053 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.053 af |
| Pond 2P: Infiltration Chamber 2 | Peak Elev=373.47' Storage=13,100 cf Inflow=11.10 cfs 0.813 af Discarded=0.99 cfs 0.777 af Primary=0.68 cfs 0.036 af Outflow=1.67 cfs 0.813 af |
| Pond 3P: Infiltration Chamber 3 | Peak Elev=372.99' Storage=843 cf Inflow=0.73 cfs 0.057 af Discarded=0.08 cfs 0.057 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.057 af |
| Pond 4P: Infiltration Chamber 4 | Peak Elev=372.70' Storage=1,879 cf Inflow=1.87 cfs 0.146 af Discarded=0.20 cfs 0.136 af Primary=0.37 cfs 0.009 af Outflow=0.57 cfs 0.145 af |
| Total Runoff Area = 2.620 ac Runoff Volume = 1.145 af Average Runoff Depth = 5.25" | |
| 38.55% Pervious = 1.010 ac 61.45% Impervious = 1.610 ac | |

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Type III 24-hr 100-YR Rainfall=8.50"

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Summary for Subcatchment P1: Entrance

Runoff = 0.79 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.50"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 0.070 | 98 | Impervious |
| * 0.090 | 39 | Lawn, Good, HSG A |
| 0.160 | 65 | Weighted Average |
| 0.090 | | 56.25% Pervious Area |
| 0.070 | | 43.75% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Type III 24-hr 100-YR Rainfall=8.50"

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Summary for Subcatchment P2: Parking/Front Building

Runoff = 11.10 cfs @ 12.09 hrs, Volume= 0.813 af, Depth> 6.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.50"

| Area (ac) | CN | Description |
|-----------|----|------------------------|
| * 1.210 | 98 | Impervious |
| * 0.230 | 39 | Lawn, Good, HSG A |
| 1.440 | 89 | Weighted Average |
| 0.230 | | 15.97% Pervious Area |
| 1.210 | | 84.03% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 153 | | 0.42 | | Direct Entry, Segment 1 |

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Type III 24-hr 100-YR Rainfall=8.50"

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Summary for Subcatchment P3: Rear Building

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af, Depth> 7.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.50"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.090 | 98 | Impervious |
| 0.090 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 130 | | 0.36 | | Direct Entry, Segment 1 |

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Type III 24-hr 100-YR Rainfall=8.50"

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Summary for Subcatchment P4: Right Building

Runoff = 1.87 cfs @ 12.09 hrs, Volume= 0.146 af, Depth> 7.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.50"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| * 0.230 | 98 | Impervious |
| 0.230 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--------------------------------|
| 6.0 | 260 | | 0.72 | | Direct Entry, Segment 1 |

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Type III 24-hr 100-YR Rainfall=8.50"

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Summary for Subcatchment P5: Lawn

Runoff = 0.83 cfs @ 12.15 hrs, Volume= 0.076 af, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.50"

| Area (ac) | CN | Description |
|-----------|----|-----------------------|
| * 0.010 | 98 | Impervious |
| * 0.690 | 39 | Lawn, Good, HSG A |
| 0.700 | 40 | Weighted Average |
| 0.690 | | 98.57% Pervious Area |
| 0.010 | | 1.43% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.8 | 50 | 0.0200 | 0.14 | | Sheet Flow, Segment 1 |
| | | | | | Grass: Short n= 0.150 P2= 3.00" |
| 1.9 | 176 | 0.0510 | 1.58 | | Shallow Concentrated Flow, Segment 2 |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 226 | Total | | | |

Summary for Reach 1R: Canal Street

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth = 0.00" for 100-YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: North Property Line

Inflow Area = 2.460 ac, 62.60% Impervious, Inflow Depth > 0.59" for 100-YR event
Inflow = 1.30 cfs @ 12.50 hrs, Volume= 0.122 af
Outflow = 1.30 cfs @ 12.50 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Infiltration Chamber 1

Inflow Area = 0.160 ac, 43.75% Impervious, Inflow Depth > 4.00" for 100-YR event
 Inflow = 0.79 cfs @ 12.09 hrs, Volume= 0.053 af
 Outflow = 0.15 cfs @ 11.80 hrs, Volume= 0.053 af, Atten= 81%, Lag= 0.0 min
 Discarded = 0.15 cfs @ 11.80 hrs, Volume= 0.053 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 372.35' @ 12.56 hrs Surf.Area= 793 sf Storage= 660 cf

Plug-Flow detention time= 29.1 min calculated for 0.053 af (100% of inflow)
 Center-of-Mass det. time= 28.7 min (824.3 - 795.6)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 371.00' | 779 cf | 16.75'W x 47.34'L x 3.50'H Field A 2,775 cf Overall - 827 cf Embedded = 1,948 cf x 40.0% Voids |
| #2A | 371.50' | 827 cf | ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows |
| | | 1,606 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 371.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 374.17' | 8.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 374.17' / 374.07' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf |

Discarded OutFlow Max=0.15 cfs @ 11.80 hrs HW=371.05' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)
 ↑2=Culvert (Controls 0.00 cfs)

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Type III 24-hr 100-YR Rainfall=8.50"

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Stage-Area-Storage for Pond 1P: Infiltration Chamber 1

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 371.00 | 793 | 0 | 373.60 | 793 | 1,302 |
| 371.05 | 793 | 16 | 373.65 | 793 | 1,323 |
| 371.10 | 793 | 32 | 373.70 | 793 | 1,343 |
| 371.15 | 793 | 48 | 373.75 | 793 | 1,362 |
| 371.20 | 793 | 63 | 373.80 | 793 | 1,381 |
| 371.25 | 793 | 79 | 373.85 | 793 | 1,398 |
| 371.30 | 793 | 95 | 373.90 | 793 | 1,415 |
| 371.35 | 793 | 111 | 373.95 | 793 | 1,432 |
| 371.40 | 793 | 127 | 374.00 | 793 | 1,448 |
| 371.45 | 793 | 143 | 374.05 | 793 | 1,463 |
| 371.50 | 793 | 159 | 374.10 | 793 | 1,479 |
| 371.55 | 793 | 189 | 374.15 | 793 | 1,495 |
| 371.60 | 793 | 219 | 374.20 | 793 | 1,511 |
| 371.65 | 793 | 249 | 374.25 | 793 | 1,527 |
| 371.70 | 793 | 279 | 374.30 | 793 | 1,543 |
| 371.75 | 793 | 309 | 374.35 | 793 | 1,559 |
| 371.80 | 793 | 339 | 374.40 | 793 | 1,574 |
| 371.85 | 793 | 369 | 374.45 | 793 | 1,590 |
| 371.90 | 793 | 398 | 374.50 | 793 | 1,606 |
| 371.95 | 793 | 428 | 374.55 | 793 | 1,606 |
| 372.00 | 793 | 457 | 374.60 | 793 | 1,606 |
| 372.05 | 793 | 487 | 374.65 | 793 | 1,606 |
| 372.10 | 793 | 516 | 374.70 | 793 | 1,606 |
| 372.15 | 793 | 545 | 374.75 | 793 | 1,606 |
| 372.20 | 793 | 574 | 374.80 | 793 | 1,606 |
| 372.25 | 793 | 603 | | | |
| 372.30 | 793 | 631 | | | |
| 372.35 | 793 | 660 | | | |
| 372.40 | 793 | 688 | | | |
| 372.45 | 793 | 717 | | | |
| 372.50 | 793 | 745 | | | |
| 372.55 | 793 | 773 | | | |
| 372.60 | 793 | 800 | | | |
| 372.65 | 793 | 828 | | | |
| 372.70 | 793 | 855 | | | |
| 372.75 | 793 | 882 | | | |
| 372.80 | 793 | 909 | | | |
| 372.85 | 793 | 936 | | | |
| 372.90 | 793 | 962 | | | |
| 372.95 | 793 | 989 | | | |
| 373.00 | 793 | 1,015 | | | |
| 373.05 | 793 | 1,041 | | | |
| 373.10 | 793 | 1,066 | | | |
| 373.15 | 793 | 1,091 | | | |
| 373.20 | 793 | 1,116 | | | |
| 373.25 | 793 | 1,141 | | | |
| 373.30 | 793 | 1,165 | | | |
| 373.35 | 793 | 1,189 | | | |
| 373.40 | 793 | 1,212 | | | |
| 373.45 | 793 | 1,235 | | | |
| 373.50 | 793 | 1,258 | | | |
| 373.55 | 793 | 1,280 | | | |

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Type III 24-hr 100-YR Rainfall=8.50"

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Summary for Pond 2P: Infiltration Chamber 2

Inflow Area = 1.440 ac, 84.03% Impervious, Inflow Depth > 6.78" for 100-YR event
 Inflow = 11.10 cfs @ 12.09 hrs, Volume= 0.813 af
 Outflow = 1.67 cfs @ 12.59 hrs, Volume= 0.813 af, Atten= 85%, Lag= 30.0 min
 Discarded = 0.99 cfs @ 11.35 hrs, Volume= 0.777 af
 Primary = 0.68 cfs @ 12.59 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 373.47' @ 12.59 hrs Surf.Area= 5,154 sf Storage= 13,100 cf

Plug-Flow detention time= 94.2 min calculated for 0.810 af (100% of inflow)
 Center-of-Mass det. time= 93.5 min (844.2 - 750.7)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 7,573 cf | 47.25'W x 109.08'L x 5.50'H Field A 28,347 cf Overall - 9,415 cf Embedded = 18,932 cf x 40.0% Voids |
| #2A | 370.45' | 9,415 cf | ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 84 Chambers in 6 Rows Cap Storage= +14.9 cf x 2 x 6 rows = 178.8 cf |
| | | 16,988 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 373.00' | 12.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 373.00' / 372.20' S= 0.0143 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.99 cfs @ 11.35 hrs HW=369.76' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.68 cfs @ 12.59 hrs HW=373.47' (Free Discharge)
 ↑2=Culvert (Inlet Controls 0.68 cfs @ 1.85 fps)

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Type III 24-hr 100-YR Rainfall=8.50"

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Stage-Area-Storage for Pond 2P: Infiltration Chamber 2

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 5,154 | 0 | 374.90 | 5,154 | 16,369 |
| 369.80 | 5,154 | 206 | 375.00 | 5,154 | 16,575 |
| 369.90 | 5,154 | 412 | 375.10 | 5,154 | 16,782 |
| 370.00 | 5,154 | 618 | 375.20 | 5,154 | 16,988 |
| 370.10 | 5,154 | 825 | | | |
| 370.20 | 5,154 | 1,031 | | | |
| 370.30 | 5,154 | 1,237 | | | |
| 370.40 | 5,154 | 1,443 | | | |
| 370.50 | 5,154 | 1,757 | | | |
| 370.60 | 5,154 | 2,178 | | | |
| 370.70 | 5,154 | 2,598 | | | |
| 370.80 | 5,154 | 3,016 | | | |
| 370.90 | 5,154 | 3,432 | | | |
| 371.00 | 5,154 | 3,847 | | | |
| 371.10 | 5,154 | 4,259 | | | |
| 371.20 | 5,154 | 4,670 | | | |
| 371.30 | 5,154 | 5,079 | | | |
| 371.40 | 5,154 | 5,486 | | | |
| 371.50 | 5,154 | 5,891 | | | |
| 371.60 | 5,154 | 6,293 | | | |
| 371.70 | 5,154 | 6,692 | | | |
| 371.80 | 5,154 | 7,089 | | | |
| 371.90 | 5,154 | 7,483 | | | |
| 372.00 | 5,154 | 7,873 | | | |
| 372.10 | 5,154 | 8,260 | | | |
| 372.20 | 5,154 | 8,644 | | | |
| 372.30 | 5,154 | 9,024 | | | |
| 372.40 | 5,154 | 9,400 | | | |
| 372.50 | 5,154 | 9,772 | | | |
| 372.60 | 5,154 | 10,139 | | | |
| 372.70 | 5,154 | 10,502 | | | |
| 372.80 | 5,154 | 10,859 | | | |
| 372.90 | 5,154 | 11,211 | | | |
| 373.00 | 5,154 | 11,557 | | | |
| 373.10 | 5,154 | 11,896 | | | |
| 373.20 | 5,154 | 12,229 | | | |
| 373.30 | 5,154 | 12,554 | | | |
| 373.40 | 5,154 | 12,870 | | | |
| 373.50 | 5,154 | 13,177 | | | |
| 373.60 | 5,154 | 13,474 | | | |
| 373.70 | 5,154 | 13,757 | | | |
| 373.80 | 5,154 | 14,023 | | | |
| 373.90 | 5,154 | 14,267 | | | |
| 374.00 | 5,154 | 14,496 | | | |
| 374.10 | 5,154 | 14,715 | | | |
| 374.20 | 5,154 | 14,926 | | | |
| 374.30 | 5,154 | 15,132 | | | |
| 374.40 | 5,154 | 15,338 | | | |
| 374.50 | 5,154 | 15,545 | | | |
| 374.60 | 5,154 | 15,751 | | | |
| 374.70 | 5,154 | 15,957 | | | |
| 374.80 | 5,154 | 16,163 | | | |

Summary for Pond 3P: Infiltration Chamber 3

Inflow Area = 0.090 ac, 100.00% Impervious, Inflow Depth > 7.60" for 100-YR event
 Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af
 Outflow = 0.08 cfs @ 11.55 hrs, Volume= 0.057 af, Atten= 89%, Lag= 0.0 min
 Discarded = 0.08 cfs @ 11.55 hrs, Volume= 0.057 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 372.99' @ 12.73 hrs Surf.Area= 431 sf Storage= 843 cf

Plug-Flow detention time= 70.8 min calculated for 0.057 af (100% of inflow)
 Center-of-Mass det. time= 70.0 min (802.9 - 732.9)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 369.70' | 420 cf | 11.00'W x 39.22'L x 3.50'H Field A 1,510 cf Overall - 459 cf Embedded = 1,050 cf x 40.0% Voids |
| #2A | 370.20' | 459 cf | ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 10 Chambers in 2 Rows |
| #3 | 373.20' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 887 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.20 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 369.70' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 379.50' | 4.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.08 cfs @ 11.55 hrs HW=369.81' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=369.70' (Free Discharge)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Stage-Area-Storage for Pond 3P: Infiltration Chamber 3

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 369.70 | 431 | 0 | 377.50 | 432 | 884 |
| 369.85 | 431 | 26 | 377.65 | 432 | 884 |
| 370.00 | 431 | 52 | 377.80 | 432 | 884 |
| 370.15 | 431 | 78 | 377.95 | 432 | 884 |
| 370.30 | 431 | 119 | 378.10 | 432 | 884 |
| 370.45 | 431 | 169 | 378.25 | 432 | 885 |
| 370.60 | 431 | 218 | 378.40 | 432 | 885 |
| 370.75 | 431 | 266 | 378.55 | 432 | 885 |
| 370.90 | 431 | 314 | 378.70 | 432 | 885 |
| 371.05 | 431 | 362 | 378.85 | 432 | 885 |
| 371.20 | 431 | 408 | 379.00 | 432 | 885 |
| 371.35 | 431 | 454 | 379.15 | 432 | 886 |
| 371.50 | 431 | 499 | 379.30 | 432 | 886 |
| 371.65 | 431 | 542 | 379.45 | 432 | 886 |
| 371.80 | 431 | 585 | 379.60 | 432 | 886 |
| 371.95 | 431 | 626 | 379.75 | 432 | 886 |
| 372.10 | 431 | 665 | 379.90 | 432 | 886 |
| 372.25 | 431 | 702 | 380.05 | 432 | 886 |
| 372.40 | 431 | 736 | 380.20 | 432 | 887 |
| 372.55 | 431 | 766 | 380.35 | 432 | 887 |
| 372.70 | 431 | 793 | 380.50 | 432 | 887 |
| 372.85 | 431 | 819 | | | |
| 373.00 | 431 | 845 | | | |
| 373.15 | 431 | 871 | | | |
| 373.30 | 432 | 880 | | | |
| 373.45 | 432 | 880 | | | |
| 373.60 | 432 | 880 | | | |
| 373.75 | 432 | 880 | | | |
| 373.90 | 432 | 880 | | | |
| 374.05 | 432 | 880 | | | |
| 374.20 | 432 | 881 | | | |
| 374.35 | 432 | 881 | | | |
| 374.50 | 432 | 881 | | | |
| 374.65 | 432 | 881 | | | |
| 374.80 | 432 | 881 | | | |
| 374.95 | 432 | 881 | | | |
| 375.10 | 432 | 881 | | | |
| 375.25 | 432 | 882 | | | |
| 375.40 | 432 | 882 | | | |
| 375.55 | 432 | 882 | | | |
| 375.70 | 432 | 882 | | | |
| 375.85 | 432 | 882 | | | |
| 376.00 | 432 | 882 | | | |
| 376.15 | 432 | 883 | | | |
| 376.30 | 432 | 883 | | | |
| 376.45 | 432 | 883 | | | |
| 376.60 | 432 | 883 | | | |
| 376.75 | 432 | 883 | | | |
| 376.90 | 432 | 883 | | | |
| 377.05 | 432 | 883 | | | |
| 377.20 | 432 | 884 | | | |
| 377.35 | 432 | 884 | | | |

Summary for Pond 4P: Infiltration Chamber 4

Inflow Area = 0.230 ac, 100.00% Impervious, Inflow Depth > 7.60" for 100-YR event
 Inflow = 1.87 cfs @ 12.09 hrs, Volume= 0.146 af
 Outflow = 0.57 cfs @ 12.40 hrs, Volume= 0.145 af, Atten= 69%, Lag= 18.8 min
 Discarded = 0.20 cfs @ 11.50 hrs, Volume= 0.136 af
 Primary = 0.37 cfs @ 12.40 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 372.70' @ 12.40 hrs Surf.Area= 1,066 sf Storage= 1,879 cf

Plug-Flow detention time= 55.9 min calculated for 0.145 af (100% of inflow)
 Center-of-Mass det. time= 55.2 min (788.1 - 732.9)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 370.00' | 997 cf | 15.75'W x 67.70'L x 3.50'H Field A 3,732 cf Overall - 1,240 cf Embedded = 2,491 cf x 40.0% Voids |
| #2A | 370.50' | 1,240 cf | ADS_StormTech SC-740 +Cap x 27 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 27 Chambers in 3 Rows |
| #3 | 373.50' | 7 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| | | 2,244 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 373.50 | 1 | 0 | 0 |
| 380.50 | 1 | 7 | 7 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 370.00' | 8.270 in/hr Exfiltration over Horizontal area |
| #2 | Primary | 372.50' | 4.0" Horiz. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads |

Discarded OutFlow Max=0.20 cfs @ 11.50 hrs HW=370.11' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=0.37 cfs @ 12.40 hrs HW=372.70' (Free Discharge)
 ↑2=Orifice/Grate (Orifice Controls 0.37 cfs @ 2.13 fps)

Stage-Area-Storage for Pond 4P: Infiltration Chamber 4

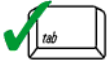
| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 370.00 | 1,066 | 0 | 377.80 | 1,067 | 2,241 |
| 370.15 | 1,066 | 64 | 377.95 | 1,067 | 2,241 |
| 370.30 | 1,066 | 128 | 378.10 | 1,067 | 2,242 |
| 370.45 | 1,066 | 192 | 378.25 | 1,067 | 2,242 |
| 370.60 | 1,066 | 299 | 378.40 | 1,067 | 2,242 |
| 370.75 | 1,066 | 426 | 378.55 | 1,067 | 2,242 |
| 370.90 | 1,066 | 553 | 378.70 | 1,067 | 2,242 |
| 371.05 | 1,066 | 678 | 378.85 | 1,067 | 2,242 |
| 371.20 | 1,066 | 802 | 379.00 | 1,067 | 2,242 |
| 371.35 | 1,066 | 923 | 379.15 | 1,067 | 2,243 |
| 371.50 | 1,066 | 1,043 | 379.30 | 1,067 | 2,243 |
| 371.65 | 1,066 | 1,160 | 379.45 | 1,067 | 2,243 |
| 371.80 | 1,066 | 1,275 | 379.60 | 1,067 | 2,243 |
| 371.95 | 1,066 | 1,387 | 379.75 | 1,067 | 2,243 |
| 372.10 | 1,066 | 1,496 | 379.90 | 1,067 | 2,243 |
| 372.25 | 1,066 | 1,600 | 380.05 | 1,067 | 2,243 |
| 372.40 | 1,066 | 1,700 | 380.20 | 1,067 | 2,244 |
| 372.55 | 1,066 | 1,795 | 380.35 | 1,067 | 2,244 |
| 372.70 | 1,066 | 1,882 | 380.50 | 1,067 | 2,244 |
| 372.85 | 1,066 | 1,957 | | | |
| 373.00 | 1,066 | 2,024 | | | |
| 373.15 | 1,066 | 2,088 | | | |
| 373.30 | 1,066 | 2,152 | | | |
| 373.45 | 1,066 | 2,216 | | | |
| 373.60 | 1,067 | 2,237 | | | |
| 373.75 | 1,067 | 2,237 | | | |
| 373.90 | 1,067 | 2,237 | | | |
| 374.05 | 1,067 | 2,237 | | | |
| 374.20 | 1,067 | 2,238 | | | |
| 374.35 | 1,067 | 2,238 | | | |
| 374.50 | 1,067 | 2,238 | | | |
| 374.65 | 1,067 | 2,238 | | | |
| 374.80 | 1,067 | 2,238 | | | |
| 374.95 | 1,067 | 2,238 | | | |
| 375.10 | 1,067 | 2,239 | | | |
| 375.25 | 1,067 | 2,239 | | | |
| 375.40 | 1,067 | 2,239 | | | |
| 375.55 | 1,067 | 2,239 | | | |
| 375.70 | 1,067 | 2,239 | | | |
| 375.85 | 1,067 | 2,239 | | | |
| 376.00 | 1,067 | 2,239 | | | |
| 376.15 | 1,067 | 2,240 | | | |
| 376.30 | 1,067 | 2,240 | | | |
| 376.45 | 1,067 | 2,240 | | | |
| 376.60 | 1,067 | 2,240 | | | |
| 376.75 | 1,067 | 2,240 | | | |
| 376.90 | 1,067 | 2,240 | | | |
| 377.05 | 1,067 | 2,240 | | | |
| 377.20 | 1,067 | 2,241 | | | |
| 377.35 | 1,067 | 2,241 | | | |
| 377.50 | 1,067 | 2,241 | | | |
| 377.65 | 1,067 | 2,241 | | | |



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): _____

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

STORMWATER MANAGEMENT CALCULATIONS

Total Impervious Area

| | |
|------------|---------------------------------|
| Pavement: | 40,783 sq.ft. /0.936 ac. |
| Buildings: | <u>28,636 sq.ft. /0.658 ac.</u> |
| Total | 69,419 sq.ft. /1.594 ac. |

Standard #3: Recharge to Groundwater

Recharge Required: $(0.6''/12) * 69,419 \text{ sq. ft. "A" impervious} = 3,471 \text{ cu.ft.}$

Recharge Provided: 660 cu. ft. @ elev. 372.35 in infiltration chamber 1
11,557 cu. ft. @ elev. 373.00 in infiltration chamber 2
844 cu. ft. @ elev. 372.99 in infiltration chamber 3
1,760 cu. ft. @ elev. 372.50 in infiltration chamber 4
14,821 cu. ft.

Drawdown within 72 hours

Time: $(660 \text{ cu.ft.}/(8.27''/\text{hr} * (1'/12'') * 793 \text{ sq.ft.})) = 1.2 \text{ hours}$ in infiltration chamber 1
 $(11,557 \text{ cu.ft.}/(8.27''/\text{hr} * (1'/12'') * 5,154 \text{ sq.ft.})) = 3.3 \text{ hours}$ in infiltration chamber 2
 $(844 \text{ cu.ft.}/(8.27''/\text{hr} * (1'/12'') * 431 \text{ sq.ft.})) = 2.8 \text{ hours}$ in infiltration chamber 3
 $(1,760 \text{ cu.ft.}/(8.27''/\text{hr} * (1'/12'') * 1,066 \text{ sq.ft.})) = 2.4 \text{ hours}$ in infiltration chamber 3

Standard #4: Water Quality

Chamber 1: Treatment Volume Required: $(1.0''/12) * 3,640 \text{ sq. ft. pavement area} = 304 \text{ cu. ft.}$
Treatment Volume Provided: 660 cu. ft. @ elev. 372.35 in infiltration chamber 1

Chamber 2: Treatment Volume Required: $(1.0''/12) * 37,143 \text{ sq. ft. pavement area} = 3,095 \text{ cu. ft.}$
Treatment Volume Provided: 11,557 cu. ft. @ elev. 373.00 in infiltration chamber 2

Riprap Apron Sizing

FE 1

$$L = (k_2 * q) / (D^{1/2}) = (3 * 0.9 \text{ cfs}) / (1.0 \text{ ft}^{1/2}) = 2.7 \text{ ft}$$

$$W1 = 3 * D = 3 * 1.0 \text{ ft} = 3.0 \text{ ft}$$

$$W2 = (3 * D) + L = (3 * 1.0 \text{ ft}) + 2.7 \text{ ft} = 5.7 \text{ ft}$$

$$D_{50} = 0.2D(q / (g^{1/2} * D^{2.5})(D/TW)) = (0.2 * 1.0 \text{ ft}) * (0.9 \text{ cfs} / (32.2 \text{ ft/s}^2)^{1/2} * 1.0^{2.5}) * (1.0 \text{ ft} / 0.5 \text{ ft})$$
$$= 0.2 * 0.159 * 0.5 = 0.016 \text{ ft} = 0.2 \text{ in}$$

STORMWATER NARRATIVE

Design Methods and Objectives

The design of this development project has been prepared in accordance with Stormwater Management Standards as outlined in the Stormwater Management Handbook. In particular, the site has been designed to ensure:

1. No new stormwater conveyances will discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. All new pavement runoff use is routed through infiltration chambers.
2. Stormwater management systems are designed so that the post-development peak discharge rate does not exceed pre-development peak discharge rates. Drainage calculations demonstrate that the peak rate of runoff is reduced in the post development condition through the use of infiltration chambers.
3. Loss of annual recharge to ground water is minimized through the use of infiltration chambers. The chambers as designed will provide 14,821 cu.ft. of storage volume which is greater than the recharge volume required for "A" soils, 3,471 cu.ft.
4. Stormwater management systems are designed to remove a minimum of 80% TSS including 44% pretreatment. The use of Stormceptor and infiltration chambers provides a minimum of 80% TSS removal including 44% pretreatment for new parking areas.
5. The use of the site for multifamily housing is not a risk for producing higher pollutant loads. Notwithstanding, the treatment of runoff from this portion of the site will ensure treatment of any potential pollutants.
6. This site is not within a Zone II or interim wellhead protection area.
7. This project is a new development and stormwater management guidelines are met.
8. For construction related activities, an operation and maintenance plan has been incorporated into the Stormwater Management Report to ensure that a protocol for runoff control is in place prior to any construction activities.
9. The operation and maintenance plan as provided provides a protocol to ensure that the stormwater management system will function as designed.
10. Prior to any construction related activities taking place, a certification regarding illicit discharges will be submitted.

INSTRUCTIONS:

1. Sheet is nonautomated. Print sheet and complete using hand calculations. Column A and B: See MassDEP Structural BMP Table
2. The calculations must be completed using the Column Headings specified in Chart and Not the Excel Column Headings
3. To complete Chart Column D, multiple Column B value within Row x Column C value within Row
4. To complete Chart Column E value, subtract Column D value within Row from Column C within Row
5. Total TSS Removal = Sum All Values in Column D

Location: 19 CANAL ST. MILL BUCKS - DMH 1

| A | B | C | D | E |
|--------------------------|-------------------------------|--------------------|----------------------|----------------------|
| BMP ¹ | TSS Removal Rate ¹ | Starting TSS Load* | Amount Removed (B*C) | Remaining Load (C-D) |
| DEEP SUMP CATCH BASIN | 0.25 | 1.00 | 0.25 | 0.75 |
| STORMceptor | 0.80 | 0.75 | 0.60 | 0.15 |
| INFILTRATION CHAMBERS | 0.80 | 0.15 | 0.12 | 0.03 |
| | | | | |
| | | | | |

Total TSS Removal =

97%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: G-611
 Prepared By: PCT
 Date: 4/5/21

*Equals remaining load from previous BMP (E) which enters the BMP

- INSTRUCTIONS:**
1. Sheet is nonautomated. Print sheet and complete using hand calculations. Column A and B: See MassDEP Structural BMP Table
 2. The calculations must be completed using the Column Headings specified in Chart and Not the Excel Column Headings
 3. To complete Chart Column D, multiple Column B value within Row x Column C value within Row
 4. To complete Chart Column E value, subtract Column D value within Row from Column C value within Row
 5. Total TSS Removal = Sum All Values in Column D

Location: 19 CANAL ST, MILL BURY - DMA 5

| A | B | C | D | E |
|--------------------------|-------------------------------|--------------------|----------------------|----------------------|
| BMP ¹ | TSS Removal Rate ¹ | Starting TSS Load* | Amount Removed (B*C) | Remaining Load (C-D) |
| DEEP SUMP CATCH BASIN | 0.25 | 1.00 | 0.25 | 0.75 |
| STORM SECTOR | 0.80 | 0.75 | 0.60 | 0.15 |
| IMPACTATION CHAMBERS | 0.80 | 0.15 | 0.12 | 0.03 |
| | | | | |
| | | | | |

Separate Form Needs to be Completed for Each Outlet or BMP Train

97%

Total TSS Removal =

Project: G-611
 Prepared By: DCR
 Date: 4/9/21

*Equals remaining load from previous BMP (E) which enters the BMP

Brief Stormceptor Sizing Report - 19 Canal Street - DMH 1

| Project Information & Location | | | |
|--------------------------------|-------------------------------|----------------------------|---------------|
| Project Name | 19 Canal Street | Project Number | G-611 |
| City | Millbury | State/ Province | Massachusetts |
| Country | United States of America | Date | 4/2/2021 |
| Designer Information | | EOR Information (optional) | |
| Name | John Grenier | Name | |
| Company | J.M. Grenier Associates, Inc. | Company | |
| Phone # | 508-845-2500 | Phone # | |
| Email | jmgrenier@townisp.com | Email | |

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

| | |
|--------------------------------------|-------------------------|
| Site Name | 19 Canal Street - DMH 1 |
| Target TSS Removal (%) | 80 |
| TSS Removal (%) Provided | 94 |
| Recommended Stormceptor Model | STC 450i |

The recommended Stormceptor Model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

| Stormceptor Sizing Summary | |
|----------------------------|------------------------|
| Stormceptor Model | % TSS Removal Provided |
| STC 450i | 94 |
| STC 900 | 97 |
| STC 1200 | 97 |
| STC 1800 | 97 |
| STC 2400 | 98 |
| STC 3600 | 98 |
| STC 4800 | 99 |
| STC 6000 | 99 |
| STC 7200 | 99 |
| STC 11000 | 99 |
| STC 13000 | 99 |
| STC 16000 | 100 |

| Sizing Details | | | |
|--------------------|------------------|--------------------------------|-----------------|
| Drainage Area | | Water Quality Objective | |
| Total Area (acres) | 0.16 | TSS Removal (%) | 80.0 |
| Imperviousness % | 50.0 | Runoff Volume Capture (%) | |
| Rainfall | | Oil Spill Capture Volume (Gal) | |
| Station Name | WORCESTER WSO AP | Peak Conveyed Flow Rate (CFS) | |
| State/Province | Massachusetts | Water Quality Flow Rate (CFS) | |
| Station ID # | 9923 | Up Stream Storage | |
| Years of Records | 58 | Storage (ac-ft) | Discharge (cfs) |
| Latitude | 42°16'2"N | 0.000 | 0.000 |
| Longitude | 71°52'34"W | Up Stream Flow Diversion | |
| | | Max. Flow to Stormceptor (cfs) | |

| Particle Size Distribution (PSD) The selected PSD defines TSS removal | | |
|--|----------------|------------------|
| Fine Distribution | | |
| Particle Diameter (microns) | Distribution % | Specific Gravity |
| 20.0 | 20.0 | 1.30 |
| 60.0 | 20.0 | 1.80 |
| 150.0 | 20.0 | 2.20 |
| 400.0 | 20.0 | 2.65 |
| 2000.0 | 20.0 | 2.65 |

| Notes |
|--|
| <ul style="list-style-type: none"> Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules. Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed. For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance. |

For Stormceptor Specifications and Drawings Please Visit:
<https://www.conteches.com/technical-guides/search?filter=1WBC005EYX>

Brief Stormceptor Sizing Report - 19 Canal Street - DMH 5

| Project Information & Location | | | |
|--------------------------------|-------------------------------|----------------------------|---------------|
| Project Name | 19 Canal Street | Project Number | G-611 |
| City | Millbury | State/ Province | Massachusetts |
| Country | United States of America | Date | 4/2/2021 |
| Designer Information | | EOR Information (optional) | |
| Name | John Grenier | Name | |
| Company | J.M. Grenier Associates, Inc. | Company | |
| Phone # | 508-845-2500 | Phone # | |
| Email | jmgrenier@townisp.com | Email | |

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

| | |
|--------------------------------------|-------------------------|
| Site Name | 19 Canal Street - DMH 5 |
| Target TSS Removal (%) | 80 |
| TSS Removal (%) Provided | 82 |
| Recommended Stormceptor Model | STC 900 |

The recommended Stormceptor Model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

| Stormceptor Sizing Summary | |
|----------------------------|------------------------|
| Stormceptor Model | % TSS Removal Provided |
| STC 450i | 74 |
| STC 900 | 82 |
| STC 1200 | 82 |
| STC 1800 | 82 |
| STC 2400 | 86 |
| STC 3600 | 86 |
| STC 4800 | 89 |
| STC 6000 | 90 |
| STC 7200 | 91 |
| STC 11000 | 94 |
| STC 13000 | 94 |
| STC 16000 | 95 |

| Sizing Details | | | |
|--------------------|------------------|--------------------------------|-----------------|
| Drainage Area | | Water Quality Objective | |
| Total Area (acres) | 1.44 | TSS Removal (%) | 80.0 |
| Imperviousness % | 84.0 | Runoff Volume Capture (%) | |
| Rainfall | | Oil Spill Capture Volume (Gal) | |
| Station Name | WORCESTER WSO AP | Peak Conveyed Flow Rate (CFS) | |
| State/Province | Massachusetts | Water Quality Flow Rate (CFS) | |
| Station ID # | 9923 | Up Stream Storage | |
| Years of Records | 58 | Storage (ac-ft) | Discharge (cfs) |
| Latitude | 42°16'2"N | 0.000 | 0.000 |
| Longitude | 71°52'34"W | Up Stream Flow Diversion | |
| | | Max. Flow to Stormceptor (cfs) | |

| Particle Size Distribution (PSD) The selected PSD defines TSS removal | | |
|--|----------------|------------------|
| Fine Distribution | | |
| Particle Diameter (microns) | Distribution % | Specific Gravity |
| 20.0 | 20.0 | 1.30 |
| 60.0 | 20.0 | 1.80 |
| 150.0 | 20.0 | 2.20 |
| 400.0 | 20.0 | 2.65 |
| 2000.0 | 20.0 | 2.65 |

| Notes |
|--|
| <ul style="list-style-type: none"> Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules. Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed. For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance. |

For Stormceptor Specifications and Drawings Please Visit:
<https://www.conteches.com/technical-guides/search?filter=1WBC005EYX>

Project: **G-611**
 Location: **Millbury, Massachusetts**

By: **DCT**
 Chkd: **JMG**

Date: **4/9/2021**
 Date: **4/9/2021**

Catchment Watershed Areas

Design Storm: **25** year

WA: **cb-1**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.04 | x | 0.9 | = | 0.036 | Overland Flow Time: | 5 min. |
| Dense grass: | 0.07 | x | 0.3 | = | 0.021 | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.11 | x | 0.52 | = | 0.06 | Flow (Q=AxCxi): | 0.3 cfs |

WA: **cb-2**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.04 | x | 0.9 | = | 0.036 | Overland Flow Time: | 5 min. |
| Dense grass: | 0.01 | x | 0.3 | = | 0.003 | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.05 | x | 0.78 | = | 0.04 | Flow (Q=AxCxi): | 0.2 cfs |

WA: **cb-3**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.32 | x | 0.9 | = | 0.288 | Overland Flow Time: | 5 min. |
| Dense grass: | 0.05 | x | 0.3 | = | 0.015 | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.37 | x | 0.82 | = | 0.30 | Flow (Q=AxCxi): | 1.8 cfs |

WA: **cb-4**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.18 | x | 0.9 | = | 0.162 | Overland Flow Time: | 5 min. |
| Dense grass: | 0.02 | x | 0.3 | = | 0.006 | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.20 | x | 0.84 | = | 0.17 | Flow (Q=AxCxi): | 1.0 cfs |

WA: **cb-5**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.45 | x | 0.9 | = | 0.405 | Overland Flow Time: | 5 min. |
| Dense grass: | 0.15 | x | 0.3 | = | 0.045 | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.60 | x | 0.75 | = | 0.45 | Flow (Q=AxCxi): | 2.7 cfs |

Project: **G-611**
 Location: **Millbury, Massachusetts**

By: **DCT**
 Chkd: **JMG**

Date: **4/9/2021**
 Date: **4/9/2021**

Catchment Watershed Areas

Design Storm: **25** year

WA: **cb-6**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.22 | x | 0.9 | = | 0.198 | Overland Flow Time: | 5 min. |
| Dense grass: | 0.03 | x | 0.3 | = | 0.009 | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.25 | x | 0.83 | = | 0.21 | Flow (Q=AxCxi): | 1.3 cfs |

WA: **left roof**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.08 | x | 0.9 | = | 0.072 | Overland Flow Time: | 5 min. |
| Dense grass: | | x | 0.3 | = | | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.08 | x | 0.90 | = | 0.07 | Flow (Q=AxCxi): | 0.4 cfs |

WA: **front roof**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.14 | x | 0.9 | = | 0.126 | Overland Flow Time: | 5 min. |
| Dense grass: | | x | 0.3 | = | | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.14 | x | 0.90 | = | 0.13 | Flow (Q=AxCxi): | 0.8 cfs |

WA: **left garage**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.05 | x | 0.9 | = | 0.045 | Overland Flow Time: | 5 min. |
| Dense grass: | | x | | = | | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.05 | x | 0.90 | = | 0.05 | Flow (Q=AxCxi): | 0.3 cfs |

WA: **right garage**

| | Area (Ac) | | C | = | AxC | | |
|--------------|-------------|---|-------------|---|-------------|---------------------|------------------|
| Paved: | 0.05 | x | 0.9 | = | 0.045 | Overland Flow Time: | 5 min. |
| Dense grass: | | x | | = | | Intensity: | 6.1 in/hr |
| <hr/> | | | | | | | |
| TOTAL: | 0.05 | x | 0.90 | = | 0.05 | Flow (Q=AxCxi): | 0.3 cfs |

OPERATION AND MAINTENANCE PLAN

19 Canal Street, Millbury

April 9, 2021

The following are operation and maintenance instructions for both construction and post-development stormwater controls. The goal of these plans is to ensure that the stormwater system, as designed, will function properly during construction and for the future of the site. The developer of the parcel is Elite Home Builders, LLC. Steve Venincasa is the contact person for work related to this project, and can be contacted at the following number: (508) 560-9440.

Construction Operation and Maintenance Plan:

1. All erosion and sediment control devices installed prior to construction shall be inspected on a daily basis. Any deficiencies in the siltation fence shall be corrected immediately. Any accumulated silt shall be removed manually from the silt fence. Silt barrier should be inspected daily to ensure that there is no accumulation of sediments.
2. The most important aspects of controlling erosion and sedimentation are limiting the extent of disturbance and stabilizing surfaces as soon as possible. Of secondary importance in erosion control is limiting the size and length of the tributary drainage area within the work site and drainage structures. These fundamental principles shall be the key factor in the control of erosion on the site.
3. All disturbed surfaces shall be stabilized a minimum of 14 days after construction in any portion of the site has ceased or is temporarily halted unless additional construction is intended to be initiated within 21 days.
4. Hydroseeding and hay mulching shall be performed immediately after construction to minimize erosion damage. Newly seeded slopes shall be inspected every two weeks for the first few months to ensure that revegetation has occurred. Repairs and reseeded shall be performed immediately as the need arises.
5. The catch basins are to be covered with plywood prior to the installation of pavement. This will prevent excess silt from accumulating in sumps and pipes. After pavement has been installed, a block and gravel inlet protection device shall be constructed surrounding the catch basin rims. This will keep silt out of the drainage system until the remainder of the site has been stabilized. The stone from the inlet protection shall be maintained frequently to ensure the highest degree of filtration.
6. At no time shall silt laden water be allowed to enter sensitive areas (wetlands, and off-site areas). Any runoff from disturbed surfaces shall be directed through settling basins and erosion control barriers prior to entering any sensitive areas.
7. At the completion of construction all areas are to be loamed and seeded to ensure that the site is stabilized.

Post Development Operation and Maintenance Plan:

1. Seeding and repairs shall be performed as required. Sediment and debris shall be removed at least once a year, typically in early spring prior to the commencement of the growing season.
2. The catch basins on the site shall be inspected annually. Units shall be cleaned when accumulated sediments reach a depth of 6 inches. Accumulated sediment must be disposed of in accordance with applicable local state, and federal guidelines and regulations. The contractor will be responsible for the maintenance of the unit until such time as the site work is complete. The maintenance will then be the responsibility of the owner(s).
3. The Stormceptor units shall be inspected and cleaned as recommended by the manufacturer.
4. A contract with a licensed hauler shall be in place for maintenance of drainage structures to ensure the long term performance of the drainage system.
5. The subsurface infiltration systems shall be inspected after every major storm for the first 3 months to ensure proper function. It shall be inspected once per year after that. Water levels should be inspected and recorded for several days after a major storm event to check infiltration capacity.
6. The contractor will be responsible for the maintenance of all drainage structures and until such time as the site work is complete. The maintenance will then be the responsibility of the property owners.

LONG TERM POLLUTION PREVENTION PLAN

19 Canal Street, Millbury

April 9, 2021

This plan was developed in compliance with the Massachusetts Department of Environmental Protection Stormwater Requirements

Good Housekeeping

The proposed site is designed to maintain high quality water treatment for all runoff. A general maintenance plan has been prepared and will be followed in a strict and complete manner as required.

Spill Prevention Plan

No hazardous materials will be stored on site. However the flowing spill prevention plan will be incorporated into the Long Term Pollution Prevention Plan

1. Manufacturers recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and location of the information and cleanup supplies.
2. Materials and equipment necessary for spill cleanup will be kept in the materials storage area. Equipment and materials will include, but is not limited to, brooms dust pans, mops, rags, gloves, sand and trash containers specifically for this purpose.
3. All spills will be cleaned up immediately after discovery.
4. The spill area will be kept will ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
5. Spills of toxic or hazardous material will be reported, regardless of size, to the Massachusetts Department of Environmental Protection (888) 304-1133
6. Should a spill occur, the spill prevention plan will be adjusted to include measures to prevent another spill and to cleanup the spill should another occur. A description of the spill along with the causes and cleanup measures will be included in the updated pollution prevention plan.
7. The construction superintendant responsible for daily operation on the site will be the spill prevention and cleanup coordinator. The superintendant will designate at least three site personnel to receive spill prevention cleanup training. The names of the responsible spill personnel will be posted in the material storage area.

Construction Sequencing

1. Selectively cut trees and clear brush to be chipped and hauled off site.
2. Stake location of and install erosion control barrier as delineated on site plan.
3. Strip top and subsoil as necessary in work area. Stockpile material on central portion of lot for backfilling purposes at completion of construction.
4. Perform site grading cuts and fills as well as construct retaining walls. Temporary basin(s) shall be constructed during this process to ensure stormwater is controlled during construction.
5. Construct building and install utilities. Subsurface drainage system shall NOT be connected to parking lot drainage system until all tributary drainage areas are stabilized and there is no potential for silt laden water to enter the subsurface recharge chambers.
6. Install finish pavement, curbing and landscaping.

Construction Inspection & Maintenance Schedule

1. Wattles and silt fence shall be inspected weekly and after storm events for damage and excessive silting. Damaged fence shall be replaced immediately.
2. Temporary construction entrance shall be inspected weekly and after heavy storm events or heavy use. The entrance shall be maintained in a condition that will prevent sediment tracking offsite. All sediment tracked onto Canal Street shall be swept up immediately
3. Stockpiled sediment shall be mulched if they are to remain for more than three weeks. The stockpiles shall be inspected weekly and after storm events for erosion damage. Additional mulch shall be added if needed.
4. Loamed and seeded area shall be inspected after final grading for areas that need to be reseeded or restabilized.
5. Temporary diversion swales shall be inspected weekly and after storm events for erosion damage and excessive silting. Silt shall be removed if necessary. Any erosion damage shall be repaired immediately.
6. The temporary construction basin shall be inspected weekly and after storm events for erosion damage and excessive silting.

Stormwater BMP Maintenance

A full BMP maintenance plan has been prepared (see Operation & Maintenance Plan) in order to ensure that the stormwater management system will function properly and as designed.

Landscape and Lawn Maintenance

Routine mowing and associated maintenance of all landscape features will occur weekly or as needed to prevent excessive growth of vegetation on site. Grass clippings and leaf litter shall not be blown into or disposed of in storm drainage systems or wetland resource areas.

Fertilizers, Herbicides & Pesticides

Fertilizer, herbicide & pesticide use will be limited to that typically associated with residential lawns. Use of slow release phosphorus fertilizers or no use of fertilizers is encouraged. All fertilizer, herbicide & pesticide use will comply with local, state and federal requirements.

Solid Waste Maintenance

Solid waste is handled on site and will comply with all local, state and federal requirements.

Pet Waste

Pet waste shall be properly disposed of in a timely manner to prevent pollution of onsite stormwater management facilities and down-gradient areas.

Snow Disposal

Snow disposal shall not be directed toward wetland resource areas.

Winter Salt & Sand Use

All winter salt and/or sand will comply with all local, state and federal requirements.

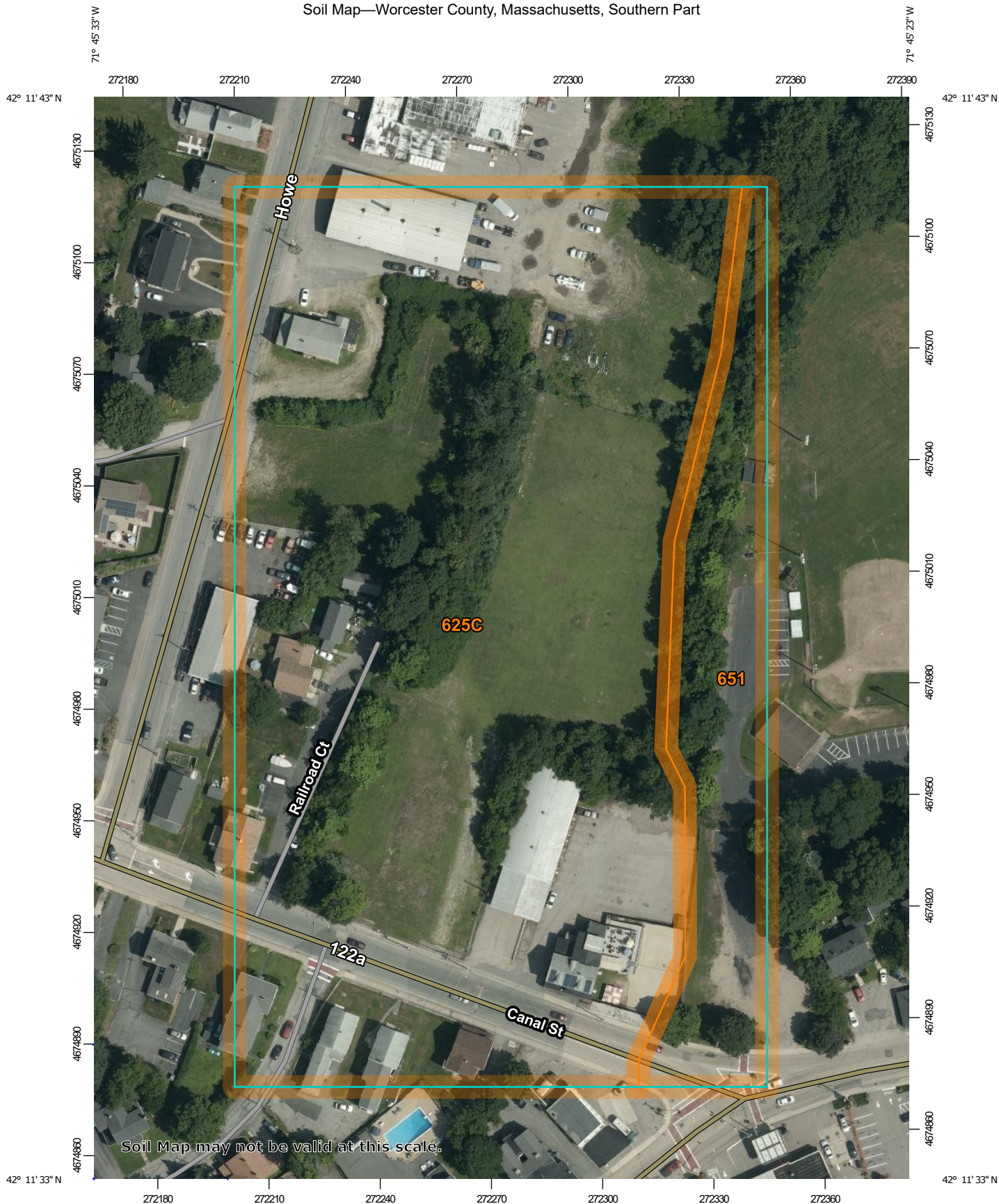
Training of Staff

All personnel on site will be briefed on all requirements for implementing the Long Term Pollution Prevention Plan

Emergency Contact for Long Term Pollution Prevention Plan

J.M. Grenier Associates, Inc.
325 Donald Lynch Boulevard Suite 100
Marlborough, MA 01752

Soil Map—Worcester County, Massachusetts, Southern Part



Map Scale: 1:1,420 if printed on A portrait (8.5" x 11") sheet.

0 20 40 80 120 Meters

0 50 100 200 300 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

1/26/2021
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Worcester County, Massachusetts, Southern Part
 Survey Area Data: Version 13, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2019—Oct 5, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| 625C | Hinckley-Urban land complex, 0 to 15 percent slopes | 7.3 | 85.2% |
| 651 | Udorthents, smoothed | 1.3 | 14.8% |
| Totals for Area of Interest | | 8.6 | 100.0% |

Location Address or Lot No. 19 CANAL STREET, MILLBURY

On-Site Review

Deep Hole Number 1 Date: 12/9/20 Time: 10:00 A.M. Weather: 40,CLOUDY

Location (identify on site plan): _____

Land Use- VACANT Slope (%) 2-5 Surface Stones NONE

Vegetation- LAWN

Landform _____

Position on Landscape (sketch on back) _____

Distances from:

Open Water Body >300 feet

Drainage way- >100 feet

Possible Wet Area >100 feet

Property Line- >30 feet

Drinking Water Well >100 feet

Other -

| <u>DEEP OBSERVATION HOLE LOG*</u> | | | | | |
|--|--------------|---------------------------------|----------------------|---------------|--|
| Depth from Surface (Inches) | Soil Horizon | Soil Texture (USDA) | Soil Color (Munsell) | Soil Mottling | Other (Structure, Stones, Boulders, Consistency, % Gravel) |
| 0-90 | FILL | | | | |
| 90-108 | C | COARSE SAND & GRAVEL | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) TILL Depth to Bedrock: >108"

Depth to Ground Water: Standing Water in the Hole N/A Weeping from Pit Face: N/A

Estimated Seasonal High Ground Water: >108"

Location Address or Lot No. 19 CANAL STREET, MILLBURY

On-Site Review

Deep Hole Number 2 Date: 12/9/20 Time: 10:00 A.M. Weather: 40,CLOUDY

Location (identify on site plan): _____

Land Use- VACANT Slope (%) 2-5 Surface Stones NONE

Vegetation- LAWN

Landform _____

Position on Landscape (sketch on back) _____

Distances from:

Open Water Body >300 feet

Drainage way- >100 feet

Possible Wet Area >100 feet

Property Line- >30 feet

Drinking Water Well >100 feet

Other -

| <u>DEEP OBSERVATION HOLE LOG*</u> | | | | | |
|--|--------------|---------------------|----------------------|---------------|--|
| Depth from Surface (Inches) | Soil Horizon | Soil Texture (USDA) | Soil Color (Munsell) | Soil Mottling | Other (Structure, Stones, Boulders, Consistency, % Gravel) |
| 0-70 | FILL | | | | SOME COBBLE/COMPACT |
| 70-96 | C | GLS | | 70" | |
| | | | | | |
| | | | | | |
| | | | | | |

*MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) TILL Depth to Bedrock: >96"

Depth to Ground Water: Standing Water in the Hole N/A Weeping from Pit Face: N/A

Estimated Seasonal High Ground Water: 70"

Location Address or Lot No. 19 CANAL STREET, MILLBURY

On-Site Review

Deep Hole Number 3 Date: 12/9/20 Time: 10:00 A.M. Weather: 40,CLOUDY

Location (identify on site plan): _____

Land Use- VACANT Slope (%) 2-5 Surface Stones NONE

Vegetation- LAWN

Landform _____

Position on Landscape (sketch on back) _____

Distances from:

Open Water Body >300 feet

Drainage way- >100 feet

Possible Wet Area >100 feet

Property Line- >30 feet

Drinking Water Well >100 feet

Other -

| <u>DEEP OBSERVATION HOLE LOG*</u> | | | | | |
|--|--------------|---------------------------------|----------------------|---------------|--|
| Depth from Surface (Inches) | Soil Horizon | Soil Texture (USDA) | Soil Color (Munsell) | Soil Mottling | Other (Structure, Stones, Boulders, Consistency, % Gravel) |
| 0-70 | FILL | | | | MED-FINE SAND @108" |
| 70-108 | C | COARSE SAND & GRAVEL | | 108" | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) TILL Depth to Bedrock: >108"

Depth to Ground Water: Standing Water in the Hole N/A Weeping from Pit Face: N/A

Estimated Seasonal High Ground Water: 108"

Location Address or Lot No. 19 CANAL STREET, MILLBURY

On-Site Review

Deep Hole Number 4 Date: 12/9/20 Time: 10:00 A.M. Weather: 40,CLOUDY

Location (identify on site plan): _____

Land Use- VACANT Slope (%) 2-5 Surface Stones NONE

Vegetation- LAWN

Landform _____

Position on Landscape (sketch on back) _____

Distances from:

Open Water Body >300 feet

Drainage way- >100 feet

Possible Wet Area >100 feet

Property Line- >30 feet

Drinking Water Well >100 feet

Other -

| <u>DEEP OBSERVATION HOLE LOG*</u> | | | | | |
|--|--------------|-----------------------|----------------------|---------------|--|
| Depth from Surface (Inches) | Soil Horizon | Soil Texture (USDA) | Soil Color (Munsell) | Soil Mottling | Other (Structure, Stones, Boulders, Consistency, % Gravel) |
| 0-80 | FILL | | | | |
| 80-96 | C | MED LOAMY SAND | | 80" | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) TILL Depth to Bedrock: >96"

Depth to Ground Water: Standing Water in the Hole N/A Weeping from Pit Face: N/A

Estimated Seasonal High Ground Water: 80"



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1 INTRODUCTION

1.1 PROJECT BACKGROUND

This traffic study evaluates the potential traffic impacts of the proposed residential development on Route 122A (Canal Street) in the Town of Millbury, Massachusetts.

The site is located on Route 122A (Canal Street) between Howe Avenue and Elm Street under a B-1 (Business I) zoning code. The residential development will consist of an approximately 120,550 square foot three-story residential building with 59 units (45 one-bedroom units, and 14 two-bedroom units), open lawn areas, outdoor amenities, a dog park, and a total of 111 parking spaces (six (6) accessible parking spaces and one (1) accessible van space). The site is accessed by one full access driveway directly across from Church Street, creating a 4-way intersection. The project is expected to be fully built and operational in 2025. **Appendix A** shows the project site plan.

1.2 PROJECT LOCATION

The residential development would be located on Route 122A (Canal Street) between Howe Avenue and Elm Street with the driveway directly across from Church Street. The project study area is illustrated on **Figure 1**.



Figure 1: Location Map

2 STUDY AREA

2.1 STUDY AREA INTERSECTIONS

The study area intersections were selected based upon site development projected traffic generation, and the street network serving the development: as depicted on Figure 2.

1. Route 122A (Canal Street) & Elm Street
2. Route 122A (Canal Street) & Church Street
3. Route 122A (Canal Street) & Howe Avenue
4. Route 122A (Canal Street) & South Main Street
5. Elm Street & South Main Street



Figure 2: Study Area Intersections

2.2 EXISTING ROADWAY AND INTERSECTION GEOMETRY

WSP conducted an inventory and evaluation of the study area intersections, which included intersection geometry, traffic controls, land use, parking regulations, and pedestrian accommodations.

2.2.1 ROUTE 122A (CANAL STREET) & ELM STREET

Route 122A (Canal Street) and Elm Street are classified as Minor Arterials with a posted speed of 30 mph. Route 122A (Canal Street) intersects with Elm Street and the gas station driveway to create a four-way intersection.

Route 122A (Canal Street) and Elm Street have one travel lane in each direction. Elm Street has on-street parking on both sides of the street that is approximately 90 feet from the intersection. The northeast leg of the intersection has one 11-foot left-through lane with a channelized 12-foot right turn lane controlled with a yield sign. The northwest leg of the intersection has a 12-foot through-right lane and one 11-foot dedicated left-turn lane. The southwest leg of the intersection has one 11-foot left-through-right turn lane which widens to a 16-foot lane at the stopbar. The southeast leg has a shared 20-foot left-through-right lane. Route 122 (Canal Street) and Elm Street approaches have marked 6-foot wide crosswalks with pedestrian curb ramps.

Figure 3 shows an aerial view of the intersection.

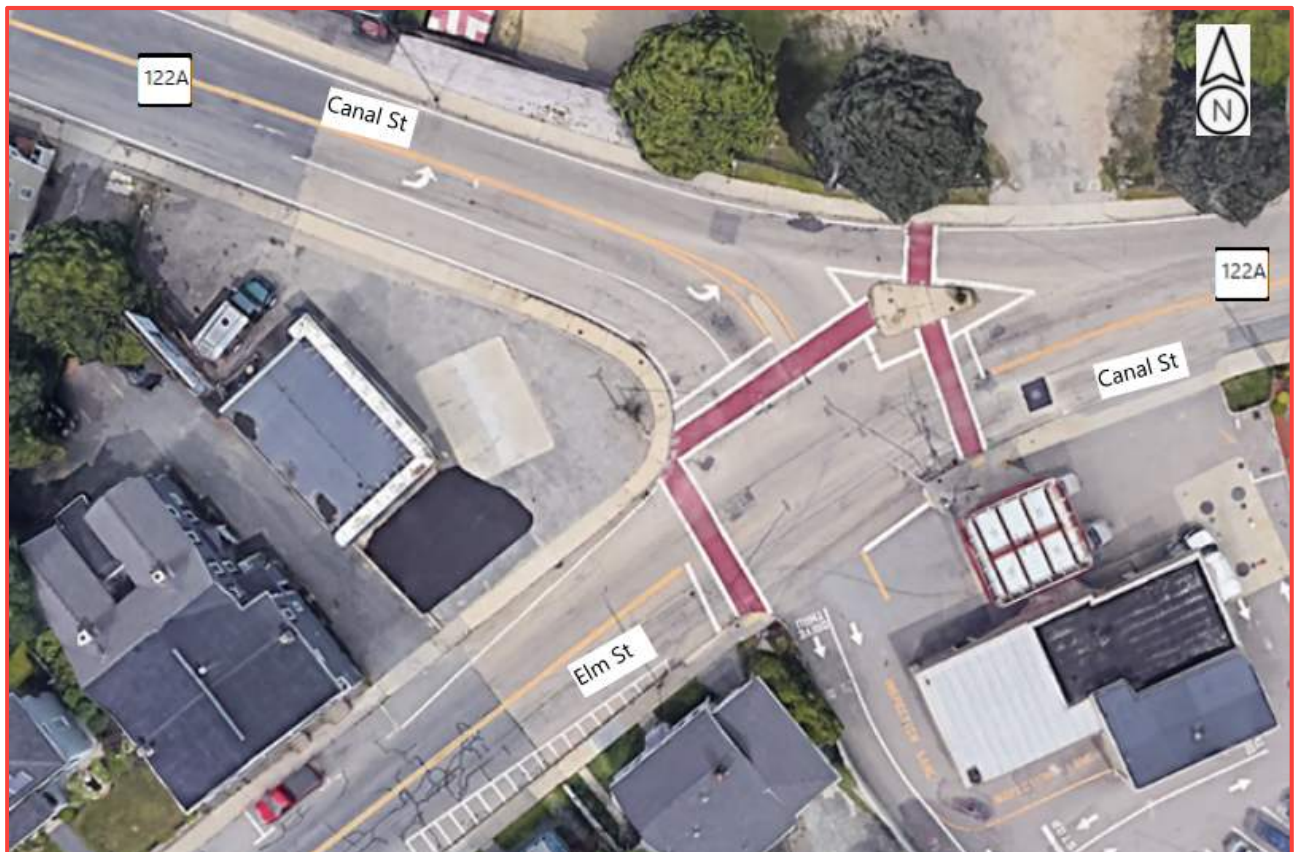


Figure 3: Route 122A (Canal Street) & Elm Street Intersection Aerial View

2.2.2 ROUTE 122A (CANAL STREET) & CHURCH STREET

Route 122A (Canal Street) is classified as a Minor Arterial with a posted speed of 30 mph. Church Street is a local street that is a one-way northbound street without a posted speed limit. Church Street intersects with Route 122A (Canal Street) to create a three-way unsignalized intersection.

Route 122A (Canal Street) has one lane in each direction without designated parking, 16-foot for the westbound direction and 14-foot for the eastbound direction. Church Street is a one-way northbound 22-foot lane under stop control without designated parking on either side of the roadway, however, vehicles park on the west side of the street. Church Street has a 6-foot wide marked crosswalk with pedestrian curb ramps.

The residential development driveway will be located directly across from Church Street, which will create a four-way intersection. The distance between Howe Avenue and Church Street is approximately 200 feet, while the distance between Church Street and Elm Street is approximately 350. There are no horizontal curvatures that restrict the sight distance at this intersection.

Figure 4 shows an aerial view of the intersection.



Figure 4: Route 122A (Canal Street) & Church Street Intersection Aerial View

2.2.3 ROUTE 122A (CANAL STREET) & HOWE AVENUE

Route 122A (Canal Street) is classified as a Minor Arterial with a posted speed of 30 mph. Howe Avenue is a Minor Arterial with a posted speed of 35 mph. Howe Avenue intersects with Route 122A (Canal Street) to create a three-way signalized intersection with no designated parking. The north leg of the intersection is a 14-foot wide left-right lane. The east leg of the intersection has a 10-foot through lane and a 9-foot wide dedicated right turn lane with 110 feet of vehicle storage. The west leg of the intersection has a 9-foot wide dedicated left-turn lane with 120 feet of vehicle storage and one 9-foot wide through lane. The Howe Avenue and Canal Street (eastbound) approaches have 5-foot wide marked crosswalks with pedestrian curb ramps.

Figure 5 shows an aerial view of the intersection.

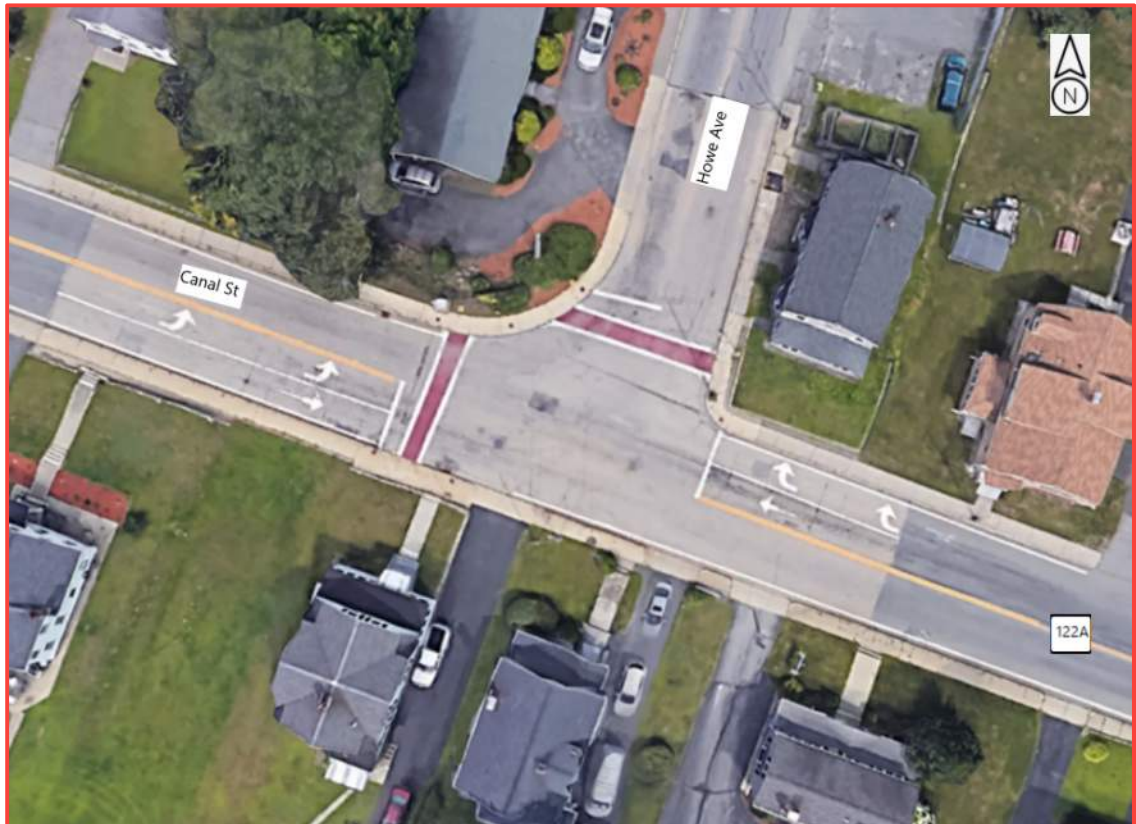


Figure 5: Route 122A (Canal Street) & Howe Avenue Intersection Aerial View

2.2.4 ROUTE 122A (CANAL STREET) & SOUTH MAIN STREET

Route 122A (Canal Street) and South Main Street are classified as Minor Arterials with a posted speed of 30 mph. Route 122A (Canal Street) intersects with South Main Street to create a three-way signalized with designated parking on the south leg of the intersection only. Summer Street intersects South Main Street approximately 25' north of the intersection, and this creates a break in the defined left and through vehicle storage to allow access to South Main Street.

The westbound approach has a 10-foot right turn lane and a 9-foot dedicated left-turn lane with 80 feet of vehicle storage. The northbound approach has a shared through-right lane. The southbound approach has a 10-foot wide through lane and an 11-foot wide dedicated left-turn lane with 25' of vehicle storage with an additional 80 feet of vehicle storage north of Summer Street. The southbound dedicated left-turn lane has a storage capacity of 150 feet. The north leg of the intersection has on-street parking on both sides of the roadway approximately 160 feet north of the intersection, and the south leg of the intersection has on-street parking on both sides of the roadway approximately 80 feet south of the intersection. Route 122 (Canal Street) and South Main Street (northbound) approaches have 7-foot-wide marked pedestrian crosswalks with designated pedestrian curb ramps.

Figure 6 shows an aerial view of the intersection.

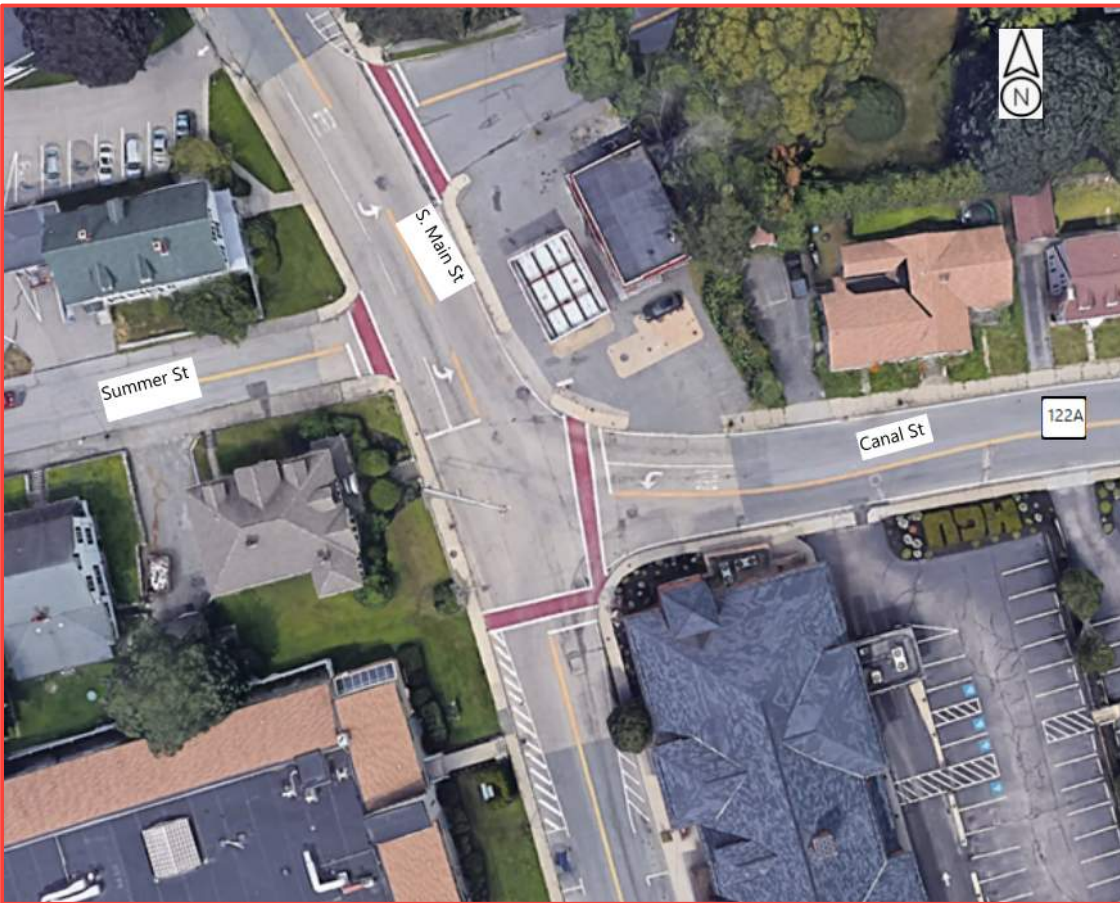


Figure 6: Route 122A (Canal Street) & South Main Street Intersection Aerial View

2.2.5 ELM STREET & SOUTH MAIN STREET

Elm Street and South Main Street are Minor Arterials with a posted speed limit of 30 mph. South Main Street intersects with Elm Street to create a four-way signalized intersection. The northbound approach has one 11-foot through lane and 11-foot one dedicated right turn only lane with 90 feet of vehicle storage. The southbound approach has one 11-foot dedicated right-turn lane with 80 feet of vehicle storage and one 11-foot shared through-left lane. The westbound approach has 11-foot one shared through-left turn lane and one 11-foot dedicated right-turn lane with 70 feet of vehicle storage. The eastbound approach has one 11-foot shared through-right lane and a 10-foot dedicated left-turn lane with 70 feet of vehicle storage. South Main Street (southbound) and Elm Street have dedicated parking on both sides of the roadway, while on the South Main Street (northbound) dedicated parking is on the east side only. All intersection approaches have a 7-foot wide marked pedestrian crosswalk with pedestrian curb ramps.

The intersection is under reconstruction under the Armory Village Green Infrastructure Project Phase 1 providing upgraded drainage, upgraded traffic & pedestrian signals, ADA compliant sidewalks/crosswalks/ramps, and landscape.

Figure 7 shows an aerial view of the intersection (left) and the conditions once the intersection is reconstructed (right).



Figure 7: Elm Street & South Main Street Intersection Aerial View

2.3 LAND USE

Land use provides an important role in defining the character of a community and it directly impacts how well a transportation corridor functions. Land use decisions directly impact the transportation systems by generating vehicle trips that may lead to traffic congestion and roadway capacity improvements. The project site is located in a B-1 (Business I) zone district and the land use around it includes a mixture of residential and commercial uses. **Figure 8** shows the land uses around the project site.

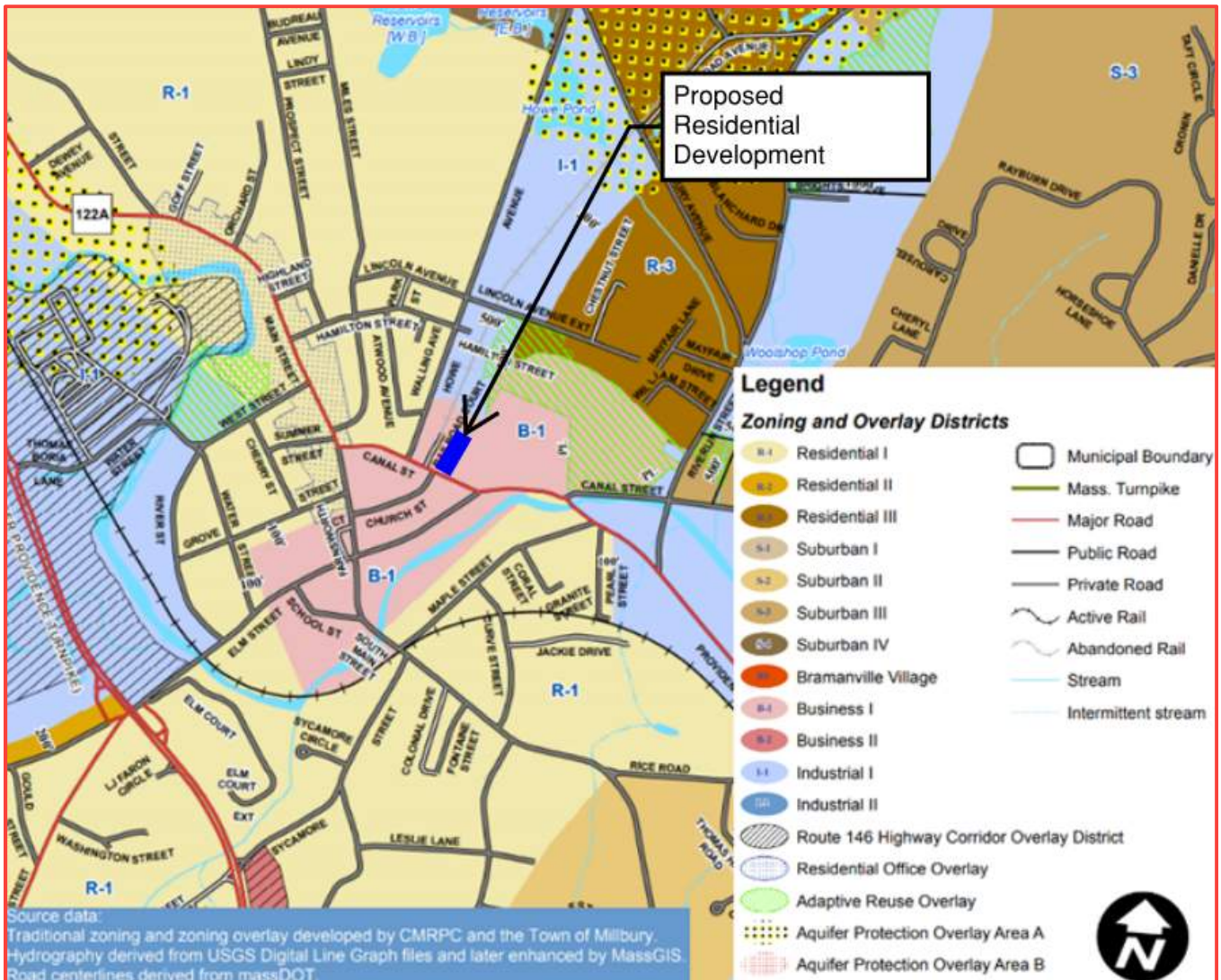


Figure 8: Land Use

2.4 MULTIMODAL USE

Multimodal transportation includes a variety of modes to move people from one location to another, such as transit, bicycle, vehicles, and trains.

There are pedestrian accommodations at the five (5) study area intersections. Additionally, there are sidewalks on both sides of Route 122A (Canal Street). In terms of bicycles, there are currently no marked bike lanes on the corridor.

The Worcester Regional Transit Authority (WRTA) currently provides services to the project site via the Route 4 Bus Route along Canal Street. The bus route connects the Town of Millbury and the Union Station Hub in Worcester. **Table 2.1** shows the schedule and bus headway for Route 4 serving the site. **Figure 9** shows the bus route on South Main Street, Route 122A (Canal Street), and Elm Street.

| | Schedule | Bus Headway AM | Bus Headway PM |
|----------|--------------------|----------------|----------------|
| Weekday | 6:20 AM – 9:47 PM | 75 minutes | 75 minutes |
| Saturday | 6:00 AM – 10:10 PM | 60 minutes | 75 minutes |
| Sunday | 10:15 AM – 5:35 PM | 75 minutes | |

Table 2.1: Bus Route Schedule & Frequency



Figure 9: Bus Route 4

2.5 INTERSECTION SIGHT DISTANCE

Intersection sight distance (ISD) 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. Per MassDOT and the American Association of State Highway and Transportation Officials (AASHTO) standards, if the measured ISD is at least equal to the required ISD value for the appropriate design speed, the intersection would operate safely. **Table 2.2** shows the ISD.

| Route 122A (Canal St) & Development Driveway/Church St | Required Minimum ISD (ft) | Calculated ISD (ft) | Measured ISD (ft) |
|--|---------------------------|---------------------|---|
| Looking to the east from the development driveway | 250 | 330.8 | Given that the driveway is not built yet, a measured ISD was not determined. However, Route 122A (Canal St) is leveled and does not have horizontal curves near the proposed driveway. The nearest horizontal curve west of the proposed driveway is located at approximately 420 ft, while the horizontal curve east of the proposed driveway is located at approximately 350 ft. Therefore, it is expected that the driveway will meet MassDOT and AASHTO requirements. |
| Looking to the west from the development driveway | | | |

Table 2.2: Intersection Sight Distance

3 SAFETY ANALYSIS

3.1 REVIEW OF HISTORICAL CRASH DATA

A crash analysis was performed for the five (5) study area intersections.

Crash data was obtained from the Massachusetts Department of Transportation’s (MassDOT) Crash Query and Visualization tool for a five-year period (January 1st, 2015-December 31st, 2019) and can be found in **Appendix B**.

The MassDOT Crash Portal’s buffer tool was used, which identifies the crashes within a given distance of a specified point and for this analysis, a 100-foot buffer was used. The total number of crashes recorded for the five (5) intersections for the analysis period (2015-2019) was twenty-six (26). **Table 3.1** shows the crashes for the five (5) signalized intersections. **Table 3.2** shows the crashes by severity, manner of collision, and other conditions.

| Intersection | 2015 | 2016 | 2017 | 2018 | 2019 | Average per Year |
|---|------|------|------|------|------|------------------|
| Route 122A (Canal Street) & Elm Street | 3 | 2 | 3 | 0 | 1 | 1.8 |
| Route 122A (Canal Street) & Church Street | 0 | 0 | 0 | 0 | 0 | 0 |
| Route 122A (Canal Street) & Howe Avenue | 2 | 2 | 1 | 2 | 0 | 1.4 |
| Route 122A (Canal Street) & South Main Street | 1 | 0 | 0 | 0 | 1 | 0.4 |
| Elm Street & South Main Street | 2 | 1 | 2 | 2 | 1 | 1.6 |

Table 3.1: Total Crashes by Intersection

| Type & Severity | Route 122A (Canal Street) & Elm Street | Route 122A (Canal Street) & Church Street | Route 122A (Canal Street) & Howe Avenue | Route 122A (Canal Street) & South Main Street | Elm Street & South Main Street |
|-------------------------------|--|---|---|---|--------------------------------|
| Crash Severity | | | | | |
| Property Damage Only (PDO) | 5 | 0 | 6 | 2 | 7 |
| Non-Fatal Injury | 4 | 0 | 1 | 0 | 1 |
| Fatal Injury | 0 | 0 | 0 | 0 | 0 |
| Not Reported | 0 | 0 | 0 | 0 | 0 |
| Unknown | 0 | 0 | 0 | 0 | 0 |
| Crash Severity | | | | | |
| Single Vehicle Crash | 0 | 0 | 0 | 0 | 0 |
| Rear-End | 5 | 0 | 0 | 1 | 4 |
| Angle | 4 | 0 | 5 | 1 | 1 |
| Sideswipe, Same Direction | 0 | 0 | 1 | 0 | 1 |
| Sideswipe, Opposite Direction | 0 | 0 | 0 | 0 | 0 |
| Head-On | 0 | 0 | 1 | 0 | 1 |
| Rear to Rear | 0 | 0 | 0 | 0 | 0 |
| Front to Front | 0 | 0 | 0 | 0 | 1 |
| Pedestrian | 0 | 0 | 0 | 0 | 0 |
| Not Reported | 0 | 0 | 0 | 0 | 0 |
| Unknown | 0 | 0 | 0 | 0 | 0 |

Table 3.2: Crashes by Collision Type & Severity - Signalized Intersections

3.1.1 CRASH RATES

Crash rates describe the number of crashes that occur at a given location during a specified time period divided by a measure of exposure for the same period. For the study area intersections, the measure of exposure is the total number of vehicles entering the intersection daily, which in this case, is the Average Annual Daily Traffic (AADT) entering the intersection.

The intersection crash rates, expressed as crashes per million entering vehicles (MEV), is as follow:

$$\text{Intersection Crash Rate} = \frac{1,000,000 \times C}{365 \times N \times V}$$

Where,

C = Total number of intersection crashes in the study period

N = Number of years of data

V = Traffic volumes entering the intersection daily

The crash rates for each of the intersections are shown in **Table 3.3**.

| | Route 122A (Canal Street) & Elm Street | Route 122A (Canal Street) & Church Street (unsignalized) | Route 122A (Canal Street) & Howe Avenue | Route 122A (Canal Street) & South Main Street | Elm Street & South Main Street | MassDOT Averages | Statewide | District 3 | | | |
|------------|--|--|---|---|--------------------------------|------------------|-----------|------------|------|------|--|
| ADT | 12,170 | 8,190 | 11,830 | 16,430 | 20,410 | | | | | | |
| Crash Rate | 0.41 | 0.00 | 0.32 | 0.07 | 0.21 | | | | 0.78 | 0.89 | |

Table 3.3: Crash Rates

The intersection crash rates are lower than the Statewide and District 3 average crash rates for signalized intersections.

4 TRAFFIC ANALYSIS

4.1 EXISTING AND FUTURE NO-BUILD TRAFFIC VOLUMES

The traffic analysis focuses on AM and PM weekday and Saturday peak hours when vehicle traffic is generally at its highest level. Turning movement counts (TMC) were collected on Thursday, February 25th, 2021 between 7:00 AM-9:00 AM and 4:00 PM-6:00 PM, and Saturday, February 27th, 2021 between 11:00 AM-1:00 PM to help determine the traffic impacts of the proposed residential development on adjacent study area roadways and intersections. The peak hours identified (the four consecutive 15-minute time segments in the peak period with the highest measured volume of traffic) that were analyzed are 7:15 -8:15 AM Peak; 4:30 - 5:30 PM Peak; and 11:15 AM-12:15 PM Saturday midday peak. The TMC data is provided in **Appendix C**.

The COVID-19 pandemic has caused a drop in vehicular traffic over the last several months. In April 2020, MassDOT published the Guidance on Traffic Count Data which is guidance on how to estimate existing and future traffic counts taken after March 13, 2020. The procedure to adjust the TMC to pre-COVID conditions, requires the use of historical data, seasonally adjust the historical data, and then forecast the historical data to the existing year.

There is one (1) count station in the study area which is located on Route 122A (Canal Street) between Howe Avenue and Elm Street. The data was collected in July 2011. MassDOT provides seasonal adjustment factors from 2014 to 2019, and for this count station, the seasonal adjustment factor of 2014 was used. Based on the MassDOT Traffic Volume and Classification, Route 122A (Canal Street) is included in group U4-7 for the Growth Factor (GF) and Seasonal Factor (SF). Based on group U4-7 the yearly growth rate for this group is 0.02% per year and the seasonal factor for July is 0.93.

The count station volumes were compared against the TMCs at the same location to develop a factor to adjust the current TMC's to pre-COVID conditions. **Table 4.1** shows the adjusted count station volumes, the TMC's at the same location as the count station, and the adjustment factor to be used.

| Source | AM Peak Volume | PM Peak Volume |
|--|----------------|----------------|
| MassDOT Count Station – Route 122A (Canal St) west of Church St (bi-directional) | 352 | 492 |
| Collected TMC – Route 122A (Canal St) west of Church St (bi-directional) | 545 | 743 |
| Peak Hour Adjustment Factor | 0.65 | 0.66 |
| Average Adjustment Factor | 0.654 | |
| Used Adjustment Factor | 1.00 | |

Table 4.1: Adjustment Factor

The MassDOT volumes are lower than the collected TMC, which resulted in an average adjustment factor of less than one (1). Therefore, an adjustment factor of 1.0 was used, and the collected TMCs were not adjusted. The Year 2021 (Existing) traffic volumes for the AM Peak, PM Peak, and Saturday are shown on **Figure 10**.

The 0.02% annual growth rate was applied to the Year 2021 traffic volumes to forecast the volumes to 2025, which is when the development is expected to be fully operational. The Millbury Planning Department's website was searched to determine if there were any other planned developments in the immediate area that would impact the traffic demand but no developments were found, therefore no additional volume adjustment was needed. The year 2025 (no-build) traffic volumes for the AM Peak, PM Peak, and Saturday are shown on **Figure 11**.

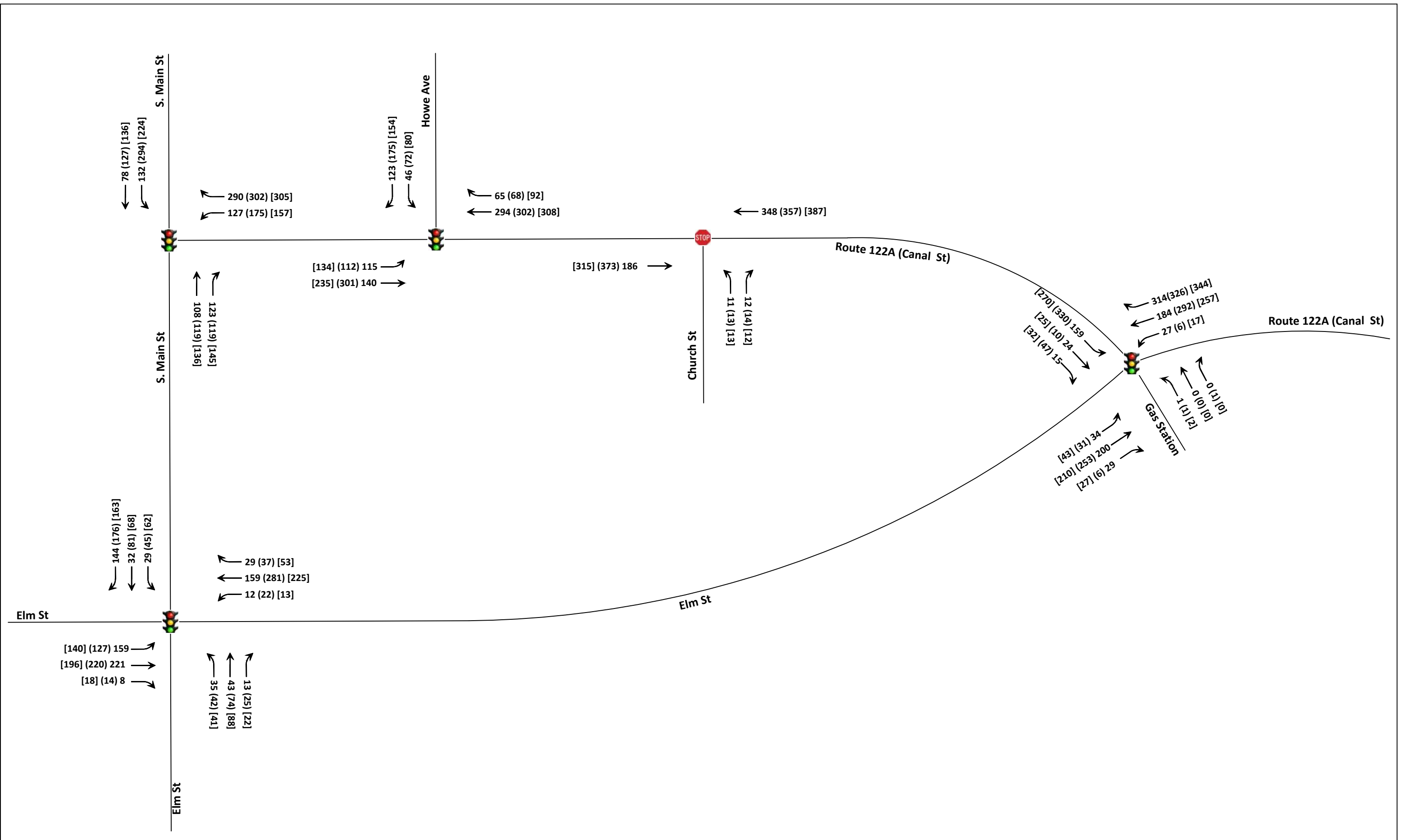


Figure 10 - Year 2021 (Existing) Traffic Volumes
 Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts

Legend
 ## = AM Peak Volumes (7:15 AM - 8:15 AM)
 (##) = PM Peak Volumes (4:30 PM - 5:30 PM)
 [##] = Saturday Peak Volumes (11:15 AM - 12:15 PM)

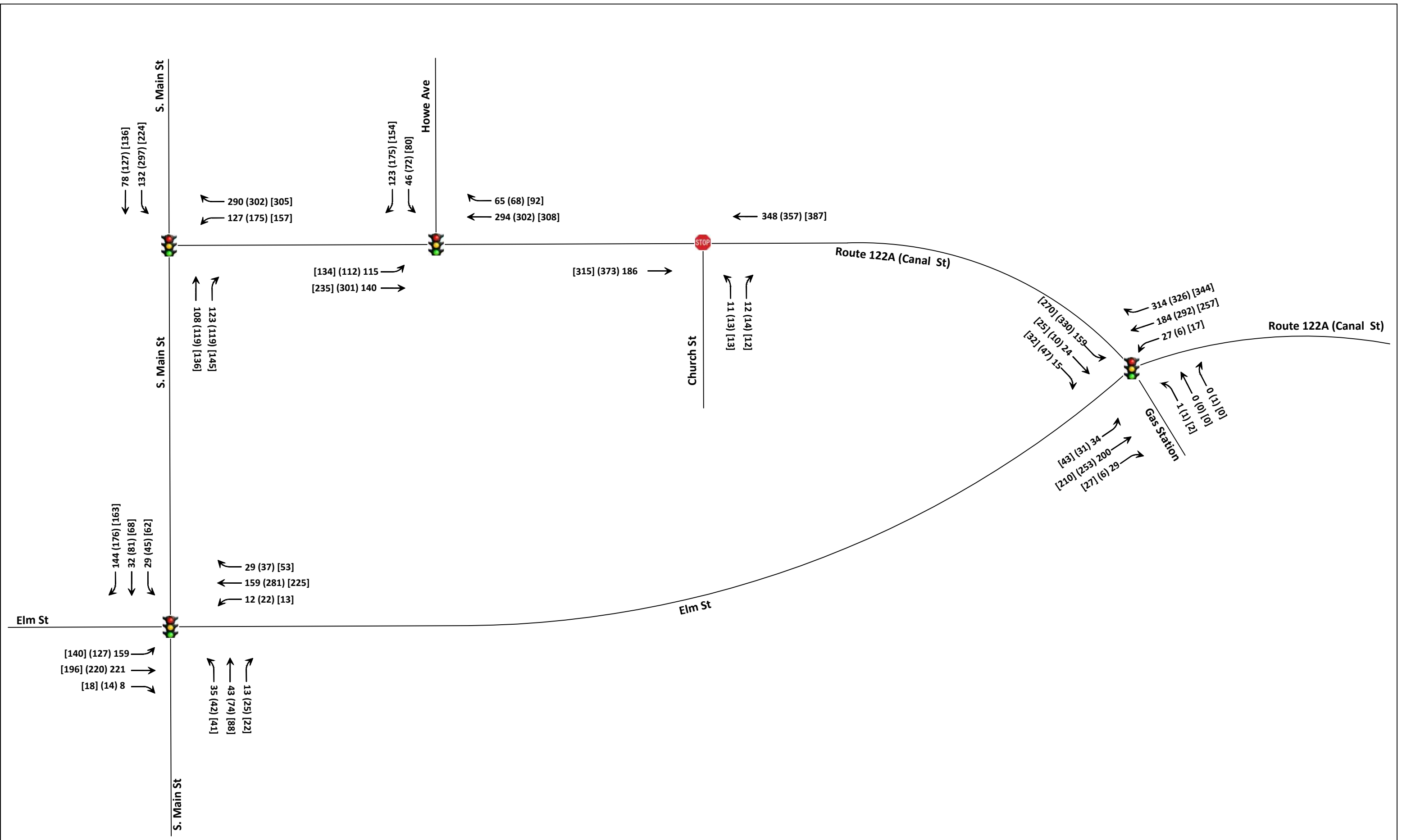


Figure 11 - Year 2025 (No-Build) Traffic Volumes
 Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts

Legend
 ## = AM Peak Volumes (7:15 AM - 8:15 AM)
 ### = PM Peak Volumes (4:30 PM - 5:30 PM)
 [###] = Saturday Peak Volumes (11:15 AM - 12:15 PM)

4.2 FUTURE BUILD TRAFFIC VOLUMES

The proposed development will include a three-story residential building (120,551 square foot area) with 59 units (45 one-bedroom and 14 two-bedroom). A total of 111 parking spaces (including 6 accessible) will be provided on-site: 93 in a surface parking lot, and 18 in a four-bay garage.

4.2.1 TRIP GENERATION & TRIP DISTRIBUTION

Site generated traffic volumes for the proposed development were estimated using rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Based on ITE, the proposed residential development falls under the Land Use Code 221 “Multifamily Housing (Mid-Rise)”, which includes apartments, townhouses, and condominiums located in the same building with a least three other dwelling units and have between three and ten levels. The trips generated by the residential development are dependent on the total number of dwelling units. The proposed residential development generated trips are shown in **Table 4.2**. **Appendix D** shows the ITE Trip Generation Manual’s Land Use Code 221 used to determine the trips.

| Period | Total Trips | Entering Percentage (from ITE) | Exiting Percentage (from ITE) | Trips Entering | Trips Exiting |
|----------|-------------|--------------------------------|-------------------------------|----------------|---------------|
| AM Peak | 20 | 26% | 74% | 5 | 15 |
| PM Peak | 27 | 61% | 39% | 16 | 11 |
| Saturday | 32 | 49% | 51% | 16 | 16 |

Table 4.2: Peak Hour Trip Generation

The trip distribution of the generated traffic entering and exiting the site was applied to the roadway network based on the existing traffic patterns within the study area, which was determined by the collected TMC’s. The trip distribution is shown in **Figure 12**.

The trips generated by the residential development were applied to the 2025 traffic volumes and the resulting Year 2025 Build traffic volumes are shown in **Figure 13**.

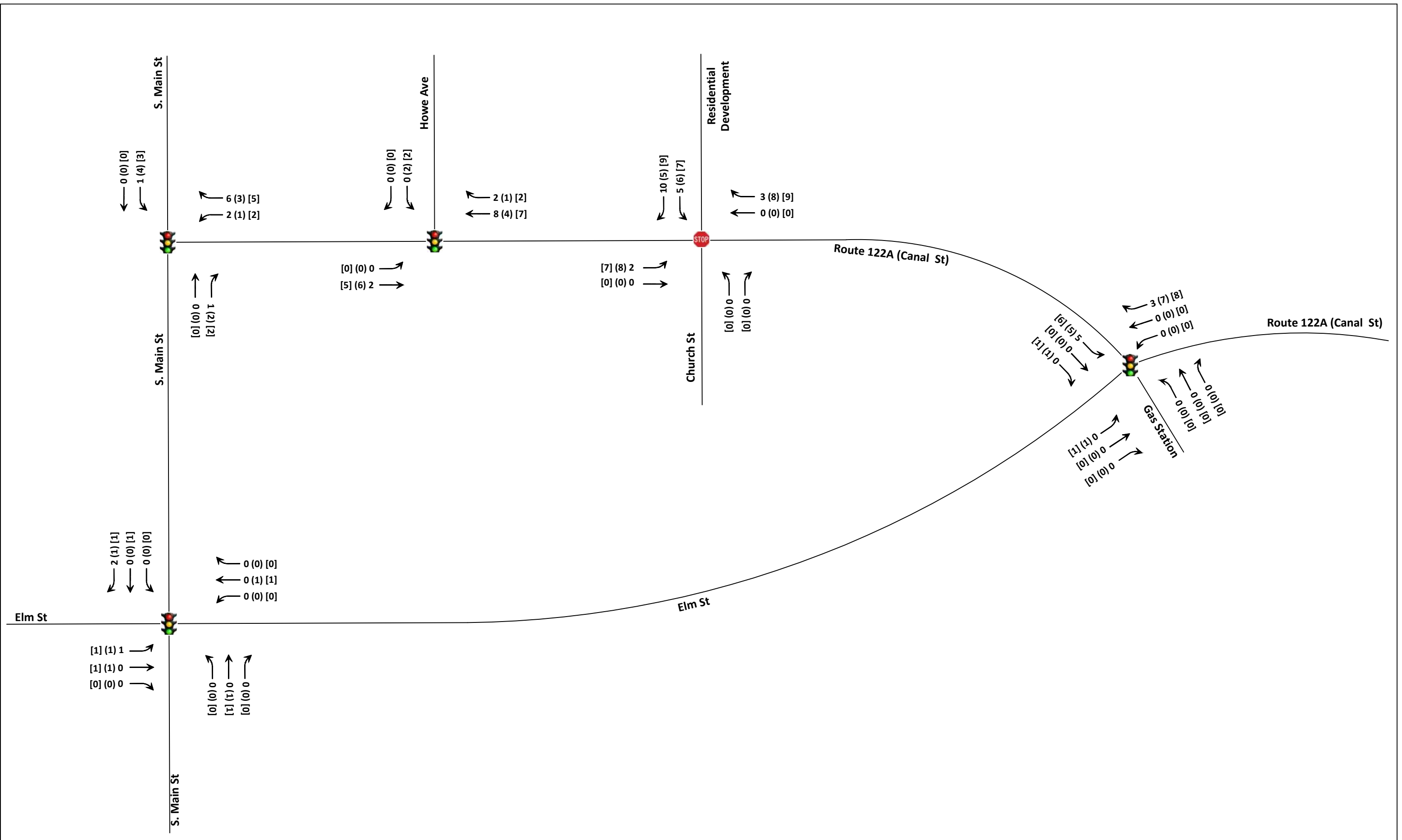


Figure 12 - Peak Hour Trip Generation & Distribution
 Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts



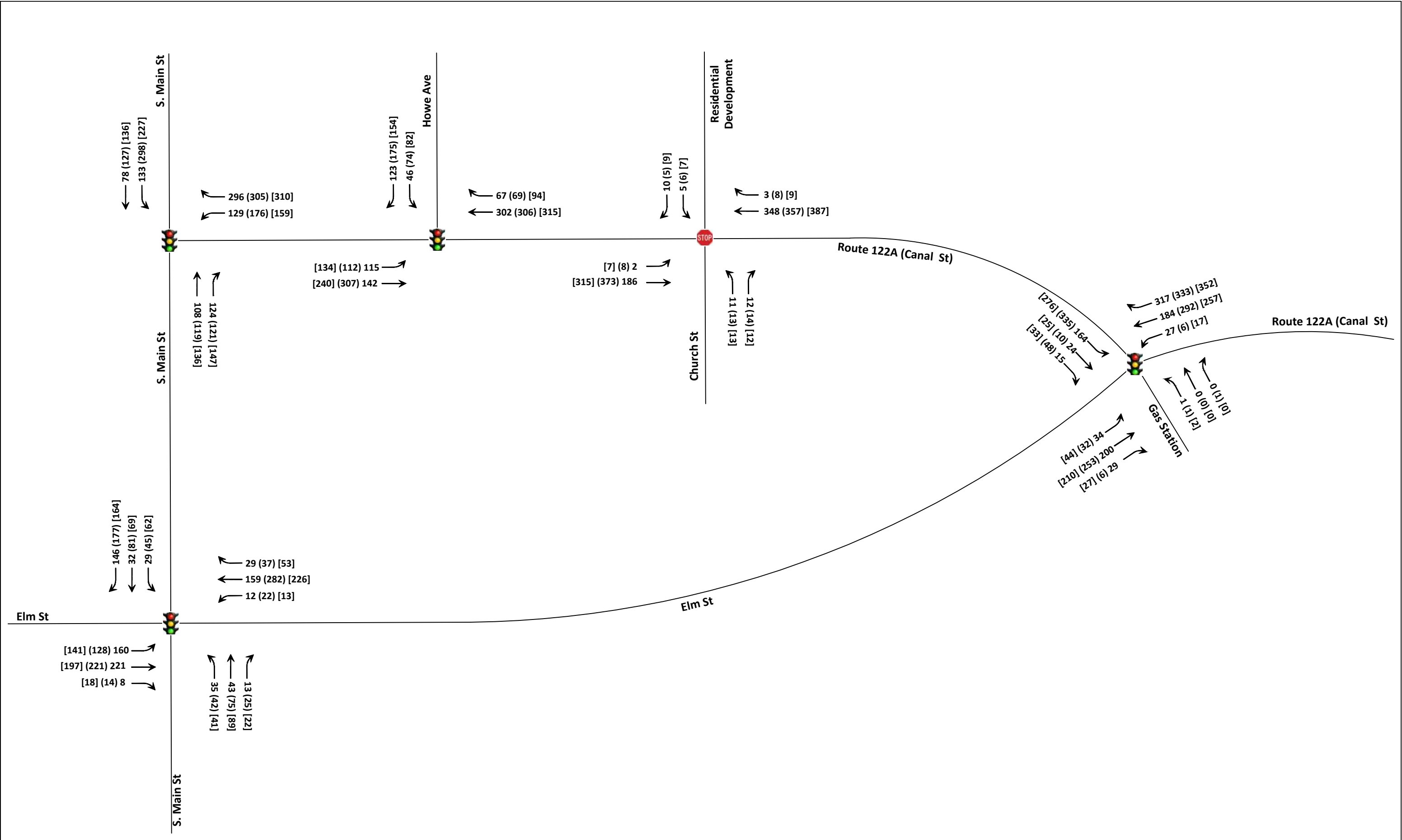


Figure 13 - Year 2025 (Build) Traffic Volumes

Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts

Legend

= AM Peak Volumes (7:15 AM - 8:15 AM)
 (##) = PM Peak Volumes (4:30 PM - 5:30 PM)
 [##] = Saturday Peak Volumes (11:15 AM - 12:15 PM)



NOT TO SCALE

April, 2021



4.3 TRAFFIC OPERATIONAL ANALYSIS METHODOLOGY

The traffic operations of the study intersection were analyzed based on the methodologies outlined in the Highway Capacity Manual (HCM) 6th Edition.

The level of service (LOS) is a calculation of control delay for an intersection. LOS is an indication of driver discomfort, frustration, fuel consumption, and lost time. LOS is defined by an index from A through F, with A being the best and F being the worst. The HCM lists the following definitions for each grade:

- A = Free Flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced flow, volume is greater than capacity

Four of the intersections are signalized, while the new development intersection is stop-controlled. The LOS for a signalized intersection is defined in terms of a weighted average control delay for the entire intersection. The LOS for the Two-Way Stop Control (TWSC) is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is used as the major street through vehicles are assumed to experience zero delays, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. (Source HCM 2010)

Capacity is a measurement of the ability of an intersection design to accommodate all movements within the intersection. Delay is the measure of the user quality of service.

The LOS assignments for signalized intersections as compared to delay values are shown in **Table 4.3**.

| Level of Service | Average Delay (seconds) |
|------------------|-------------------------|
| A | ≤ 10 |
| B | > 10 and ≤ 20 |
| C | > 20 and ≤ 35 |
| D | > 35 and ≤ 55 |
| E | > 55 and ≤ 80 |
| F | > 80 |

Table 4.3: Signalized Intersection Level of Service Criteria

The LOS assignments for TWSC intersections as compared to delay values are shown in **Table 4.4**.

| Level of Service | Average Delay (seconds) |
|------------------|-------------------------|
| A | ≤ 10 |
| B | > 10 and ≤ 15 |
| C | > 15 and ≤ 25 |
| D | > 25 and ≤ 35 |
| E | > 35 and ≤ 50 |
| F | > 50 |

Table 4.4: TWSC Intersection & Roundabout Level of Service Criteria

Trafficware’s Synchro 10 software was used to perform the traffic analysis. Synchro implements the methods outlined in the Highway Capacity Manual (HCM) and provides delay/vehicle and queue length results.

4.4 EXISTING, NO-BUILD & BUILD OPERATIONAL ANALYSIS

The Synchro results for both the existing conditions (Year 2021), the no-build conditions (Year 2025) and the build conditions (Year 2025) are described in this section. All analyses were performed for the AM peak, PM peak, and Saturday midday peak to determine the delays, 50th percentile queue length (maximum back of the queue on a typical cycle), 95th percentile queue length (queue length (in feet) that has a 5-percent probability of being exceeded during the analysis time period), LOS and volume/capacity (v/c) ratio. To present a conservative analysis, WSP did not take any multimodal trip reduction credit for use of public transportation. The full printout of the Synchro results is documented in **Appendix E**.

A summary of the Synchro results in terms of LOS, queue lengths, delay, and v/c ratio for each intersection for the existing conditions, the no-build conditions, and the build conditions are presented in **Table 4.5**, **Table 4.6**, and **Table 4.7**.

Additionally, **Figure 14**, **Figure 15**, and **Figure 16** show the LOS for each movement and the overall intersection LOS for the AM peak, PM peak, and Saturday midday peak hours.

Based on the operational analysis, the five (5) intersections currently operate at acceptable levels and will continue to do so in the future no-build conditions. The proposed development would be adding a maximum of 32 trips during a peak hour (Saturday midday) at Church Street & the development intersection. These trips are distributed between the other four intersections depending on the trip origin-destination which results in only a few trips at these four intersections. The additional traffic due to this proposed project will not impact the current vehicle operating levels within the study area.



| Intersection | | Approach | Movement | Year 2021 (Existing) | | | | | | | | | | | | | | |
|---------------------------|--|---|----------|----------------------|-----------|-----------------------------|-----------------------------|------|-------------|-----------|-----------------------------|-----------------------------|------|-------------|-----------|-----------------------------|-----------------------------|-----|
| | | | | AM Peak | | | | | PM Peak | | | | | Sat Midday | | | | |
| | | | | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS |
| Signalized Intersection | Route 122A (Canal Street) & Howe Avenue | EB | L | 5.8 | 0.24 | <25 | 34 | A | 6.8 | 0.29 | <25 | 37 | A | 7.8 | 0.35 | <25 | 45 | A |
| | | | T | 5.0 | 0.15 | <25 | 40 | A | 6.8 | 0.36 | 36 | 93 | A | 6.7 | 0.29 | 30 | 75 | A |
| | | WB | T | 14.7 | 0.52 | 61 | 134 | B | 17.1 | 0.61 | 74 | 143 | B | 16.9 | 0.57 | 68 | 155 | B |
| | | | R | 4.4 | 0.13 | <25 | <25 | A | 5.0 | 0.15 | <25 | <20 | A | 4.7 | 0.18 | <25 | 27 | A |
| | | SB | LR | 9.5 | 0.45 | <25 | 45 | A | 11.8 | 0.55 | <25 | 85 | B | 13.6 | 0.56 | 28 | 88 | B |
| | Route 122A (Canal Street) & S. Main Street | WB | L | 18.9 | 0.37 | 30 | 79 | B | 24.2 | 0.53 | 53 | 121 | C | 22.3 | 0.48 | 44 | 104 | C |
| | | | R | 6.5 | 0.55 | <25 | 48 | A | 6.8 | 0.57 | <25 | 44 | A | 6.8 | 0.58 | <25 | 45 | A |
| | | NB | TR | 14.9 | 0.56 | 43 | 91 | B | 20.0 | 0.63 | 58 | 120 | B | 18.2 | 0.64 | 58 | 131 | B |
| | | | L | 6.9 | 0.29 | <25 | 42 | A | 10.4 | 0.55 | 42 | 105 | B | 8.8 | 0.45 | 28 | 76 | A |
| | Elm Street & S. Main Street | SB | T | 5.5 | 0.10 | <25 | 27 | A | 6.2 | 0.13 | <25 | 46 | A | 6.0 | 0.14 | <25 | 47 | A |
| | | | L | 5.4 | 0.24 | <25 | 41 | A | 6.2 | 0.23 | <25 | 41 | A | 7.0 | 0.29 | <25 | 45 | A |
| | | EB | TR | 5.1 | 0.23 | <25 | 57 | A | 5.9 | 0.24 | 27 | 70 | A | 6.5 | 0.28 | 28 | 64 | A |
| | | | LT | 15.9 | 0.34 | 40 | 88 | B | 15.7 | 0.51 | 75 | 149 | B | 18.2 | 0.50 | 55 | 122 | B |
| | | WB | R | 0.2 | 0.06 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A | 1.5 | 0.11 | <25 | <25 | A |
| | | | LT | 17.3 | 0.22 | <25 | 51 | B | 19.5 | 0.34 | 31 | 76 | B | 19.8 | 0.43 | 35 | 78 | B |
| | | NB | R | 0.2 | 0.03 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A |
| | | | LT | 17.0 | 0.19 | <25 | 41 | B | 19.3 | 0.34 | 31 | 83 | B | 19.7 | 0.41 | 31 | 81 | B |
| | SB | R | 5.4 | 0.32 | <25 | 27 | A | 5.3 | 0.34 | <25 | 39 | A | 5.4 | 0.34 | <25 | 38 | A | |
| | | L | 16.5 | 0.41 | 32 | 94 | B | 29.0 | 0.75 | 103 | #260 | C | 23.3 | 0.64 | 67 | 180 | C | |
| | Route 122A (Canal Street) & Elm Street | SEB | TR | 9.8 | 0.08 | <25 | <25 | A | 6.9 | 0.11 | <25 | 26 | A | 8.9 | 0.11 | <25 | 31 | A |
| LTR | | | 13.0 | 0.01 | <25 | <25 | B | 0.0 | 0.01 | <25 | <25 | A | 14.0 | 0.02 | <25 | <25 | B | |
| NEB | | LTR | 8.0 | 0.33 | 36 | 92 | A | 11.7 | 0.41 | 64 | 127 | B | 10.9 | 0.43 | 50 | 123 | B | |
| | | LTR | 8.1 | 0.56 | 52 | 167 | A | 18.4 | 0.80 | 149 | 306 | B | 15.4 | 0.76 | 101 | 268 | B | |
| Unsignalized Intersection | | Route 122A (Canal Street) & Church Street | EB | T | 0.0 | 0.13 | <25 | <25 | A | 0.0 | 0.25 | <25 | <25 | A | 0.0 | 0.21 | <25 | <25 |
| | T | | | 0.0 | 0.23 | <25 | <25 | A | 0.0 | 0.25 | <25 | <25 | A | 0.0 | 0.25 | <25 | <25 | A |
| | NB | | LR | 11.3 | 0.04 | <25 | <25 | B | 13.7 | 0.07 | <25 | <25 | B | 13.0 | 0.06 | <25 | <25 | B |
| | | | LR | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



| Intersection | | Approach | Movement | Year 2025 (No-Build) | | | | | | | | | | | | | | |
|---------------------------|--|---|----------|-------------------------|-----------|-----------------------------|-----------------------------|------|-------------|-----------|-----------------------------|-----------------------------|------|-------------|-----------|-----------------------------|-----------------------------|-----|
| | | | | AM Peak | | | | | PM Peak | | | | | Sat Midday | | | | |
| | | | | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS |
| Signalized Intersection | Route 122A (Canal Street) & Howe Avenue | EB | L | 5.8 | 0.24 | <25 | 34 | A | 6.8 | 0.29 | <25 | 37 | A | 7.8 | 0.35 | <25 | 45 | A |
| | | | T | 5.0 | 0.15 | <25 | 40 | A | 6.8 | 0.36 | 36 | 93 | A | 6.7 | 0.29 | 30 | 75 | A |
| | | WB | T | 14.7 | 0.52 | 61 | 134 | B | 17.1 | 0.61 | 74 | 143 | B | 16.9 | 0.57 | 68 | 155 | B |
| | | | R | 4.4 | 0.13 | <25 | <25 | A | 5.0 | 0.15 | <25 | <25 | A | 4.7 | 0.18 | <25 | 27 | A |
| | | SB | LR | 9.5 | 0.45 | <25 | 45 | A | 11.8 | 0.55 | <25 | 85 | B | 13.6 | 0.56 | 28 | 88 | B |
| | Route 122A (Canal Street) & S. Main Street | WB | L | 18.9 | 0.37 | 30 | 79 | B | 24.2 | 0.53 | 53 | 121 | C | 22.3 | 0.48 | 44 | 104 | C |
| | | | R | 6.5 | 0.55 | <25 | 48 | A | 6.8 | 0.57 | <25 | 44 | A | 6.8 | 0.58 | <25 | 45 | A |
| | | NB | TR | 14.9 | 0.56 | 43 | 91 | B | 20.0 | 0.63 | 58 | 120 | B | 18.2 | 0.64 | 58 | 131 | B |
| | | | L | 6.9 | 0.29 | <25 | 42 | A | 10.4 | 0.55 | 42 | 105 | B | 8.8 | 0.45 | 28 | 76 | A |
| | Elm Street & S. Main Street | SB | T | 5.5 | 0.10 | <25 | 27 | A | 6.2 | 0.13 | <25 | 46 | A | 6.0 | 0.14 | <25 | 47 | A |
| | | | L | 5.4 | 0.24 | <25 | 41 | A | 6.2 | 0.23 | <25 | 41 | A | 7.0 | 0.29 | <25 | 45 | A |
| | | EB | TR | 5.1 | 0.23 | <25 | 57 | A | 5.9 | 0.24 | 27 | 70 | A | 6.5 | 0.28 | 28 | 64 | A |
| | | | LT | 15.9 | 0.34 | 40 | 88 | B | 15.7 | 0.51 | 75 | 149 | B | 18.2 | 0.50 | 55 | 122 | B |
| | | WB | R | 0.2 | 0.06 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A | 1.5 | 0.11 | <25 | <25 | A |
| | | | LT | 17.3 | 0.22 | <25 | 51 | B | 19.5 | 0.34 | 31 | 76 | B | 19.8 | 0.43 | 35 | 78 | B |
| | | NB | R | 0.2 | 0.03 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A |
| | | | LT | 17.0 | 0.19 | <25 | 41 | B | 19.3 | 0.34 | 31 | 83 | B | 19.7 | 0.41 | 31 | 81 | B |
| | SB | R | 5.4 | 0.32 | <25 | 27 | A | 5.3 | 0.34 | <25 | 39 | A | 5.4 | 0.34 | <25 | 38 | A | |
| | | L | 16.5 | 0.41 | 32 | 94 | B | 29.0 | 0.75 | 103 | #260 | C | 23.3 | 0.64 | 67 | 180 | C | |
| | Route 122A (Canal Street) & Elm Street | SEB | TR | 9.8 | 0.08 | <25 | <25 | A | 6.9 | 0.11 | <25 | 26 | A | 8.9 | 0.11 | <25 | 31 | A |
| LTR | | | 13.0 | 0.01 | <25 | <25 | B | 0.0 | 0.01 | <25 | <25 | A | 14.0 | 0.02 | <25 | <25 | B | |
| NEB | | LTR | 8.0 | 0.33 | 36 | 92 | A | 11.7 | 0.41 | 64 | 127 | B | 10.9 | 0.43 | 50 | 123 | B | |
| | | LTR | 8.1 | 0.56 | 52 | 167 | A | 18.4 | 0.80 | 149 | 306 | B | 15.4 | 0.76 | 101 | 268 | B | |
| Unsignalized Intersection | | Route 122A (Canal Street) & Church Street | EB | T | 0.0 | 0.13 | <25 | <25 | A | 0.0 | 0.25 | <25 | <25 | A | 0.0 | 0.21 | <25 | <25 |
| | T | | | 0.0 | 0.23 | <25 | <25 | A | 0.0 | 0.25 | <25 | <25 | A | 0.0 | 0.25 | <25 | <25 | A |
| | NB | | LR | 11.3 | 0.04 | <25 | <25 | B | 13.7 | 0.07 | <25 | <25 | B | 13.0 | 0.06 | <25 | <25 | B |
| | | | LR | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



| Intersection | | Approach | Movement | Year 2025 (Build) | | | | | | | | | | | | | | |
|---------------------------|--|----------|----------|-------------------|-----------|-----------------------------|-----------------------------|------|-------------|-----------|-----------------------------|-----------------------------|------|-------------|-----------|-----------------------------|-----------------------------|-----|
| | | | | AM Peak | | | | | PM Peak | | | | | Sat Midday | | | | |
| | | | | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS | Delay (sec) | V/C Ratio | 50 th Queue (ft) | 95 th Queue (ft) | LOS |
| Signalized Intersection | Route 122A (Canal Street) & Howe Avenue | EB | L | 5.8 | 0.24 | <25 | 34 | A | 6.8 | 0.30 | <25 | 37 | A | 7.9 | 0.35 | <25 | 46 | A |
| | | | T | 5.0 | 0.15 | <25 | 40 | A | 6.9 | 0.37 | 38 | 96 | A | 6.8 | 0.30 | 31 | 77 | A |
| | | WB | T | 14.7 | 0.53 | 63 | 138 | B | 17.1 | 0.61 | 77 | 145 | B | 17.0 | 0.58 | 71 | 160 | B |
| | | | R | 4.5 | 0.14 | <25 | <25 | A | 5.1 | 0.15 | <25 | <25 | A | 4.9 | 0.19 | <25 | 27 | A |
| | | SB | LR | 9.6 | 0.45 | <25 | 45 | A | 12.2 | 0.55 | <25 | 88 | B | 13.9 | 0.56 | 30 | 91 | B |
| | Route 122A (Canal Street) & S. Main Street | WB | L | 19.0 | 0.38 | 31 | 80 | B | 24.4 | 0.54 | 54 | 123 | C | 22.5 | 0.49 | 45 | 106 | C |
| | | | R | 6.5 | 0.55 | <25 | 48 | A | 6.8 | 0.58 | <25 | 45 | A | 6.9 | 0.58 | <25 | 46 | A |
| | | NB | TR | 15.0 | 0.57 | 43 | 91 | B | 19.9 | 0.63 | 58 | 120 | B | 18.2 | 0.64 | 59 | 132 | B |
| | | SB | L | 6.9 | 0.30 | <25 | 42 | A | 10.5 | 0.56 | 43 | 106 | B | 9.0 | 0.46 | 29 | 77 | A |
| | Elm Street & S. Main Street | EB | T | 5.5 | 0.10 | <25 | 27 | A | 6.1 | 0.13 | <25 | 46 | A | 6.1 | 0.14 | <25 | 47 | A |
| | | | TR | 5.4 | 0.24 | <25 | 42 | A | 6.2 | 0.23 | <25 | 41 | A | 7.0 | 0.29 | <25 | 45 | A |
| | | WB | LT | 5.1 | 0.23 | <25 | 58 | A | 5.9 | 0.24 | 27 | 70 | A | 6.5 | 0.28 | 28 | 65 | A |
| | | | R | 16.0 | 0.34 | 40 | 88 | B | 15.7 | 0.51 | 75 | 149 | B | 18.3 | 0.50 | 56 | 123 | B |
| | | NB | LT | 0.2 | 0.06 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A | 1.5 | 0.11 | <25 | <25 | A |
| | | | R | 17.3 | 0.22 | <25 | 51 | B | 19.6 | 0.35 | 31 | 77 | B | 19.9 | 0.43 | 35 | 78 | B |
| | | SB | LT | 0.2 | 0.03 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A | 0.2 | 0.06 | <25 | <25 | A |
| | | | R | 16.9 | 0.19 | <25 | 41 | B | 19.3 | 0.34 | 31 | 83 | B | 19.7 | 0.41 | 31 | 81 | B |
| | Route 122A (Canal Street) & Elm Street | SEB | L | 5.4 | 0.33 | <25 | 27 | A | 5.3 | 0.34 | <25 | 39 | A | 5.4 | 0.34 | <25 | 37 | A |
| | | | TR | 16.5 | 0.42 | 33 | 97 | B | 29.6 | 0.75 | 107 | #265 | C | 23.9 | 0.66 | 70 | 185 | C |
| | | NWB | LTR | 9.8 | 0.08 | <25 | <25 | A | 6.9 | 0.11 | <25 | 26 | A | 8.9 | 0.11 | <25 | 31 | A |
| LTR | | | 13.0 | 0.01 | <25 | <25 | B | 0.0 | 0.01 | <25 | <25 | A | 14.0 | 0.02 | <25 | <25 | B | |
| SWB | | LTR | 8.1 | 0.33 | 37 | 94 | A | 11.7 | 0.41 | 65 | 128 | B | 11.0 | 0.43 | 52 | 124 | B | |
| Unsignalized Intersection | Route 122A (Canal Street) & Church Street | EB | T | 0.1 | 0.00 | <25 | <25 | A | 0.3 | 0.01 | <25 | <25 | A | 0.3 | 0.01 | <25 | <25 | A |
| | | WB | T | 0.0 | 0.23 | <25 | <25 | A | 0.0 | 0.26 | <25 | <25 | A | 0.0 | 0.26 | <25 | <25 | A |
| | | NB | LR | 12.0 | 0.05 | <25 | <25 | B | 15.1 | 0.08 | <25 | <25 | C | 14.4 | 0.07 | <25 | <25 | B |
| | | SB | LR | 11.8 | 0.03 | <25 | <25 | B | 16.2 | 0.04 | <25 | <25 | C | 14.1 | 0.04 | <25 | <25 | B |

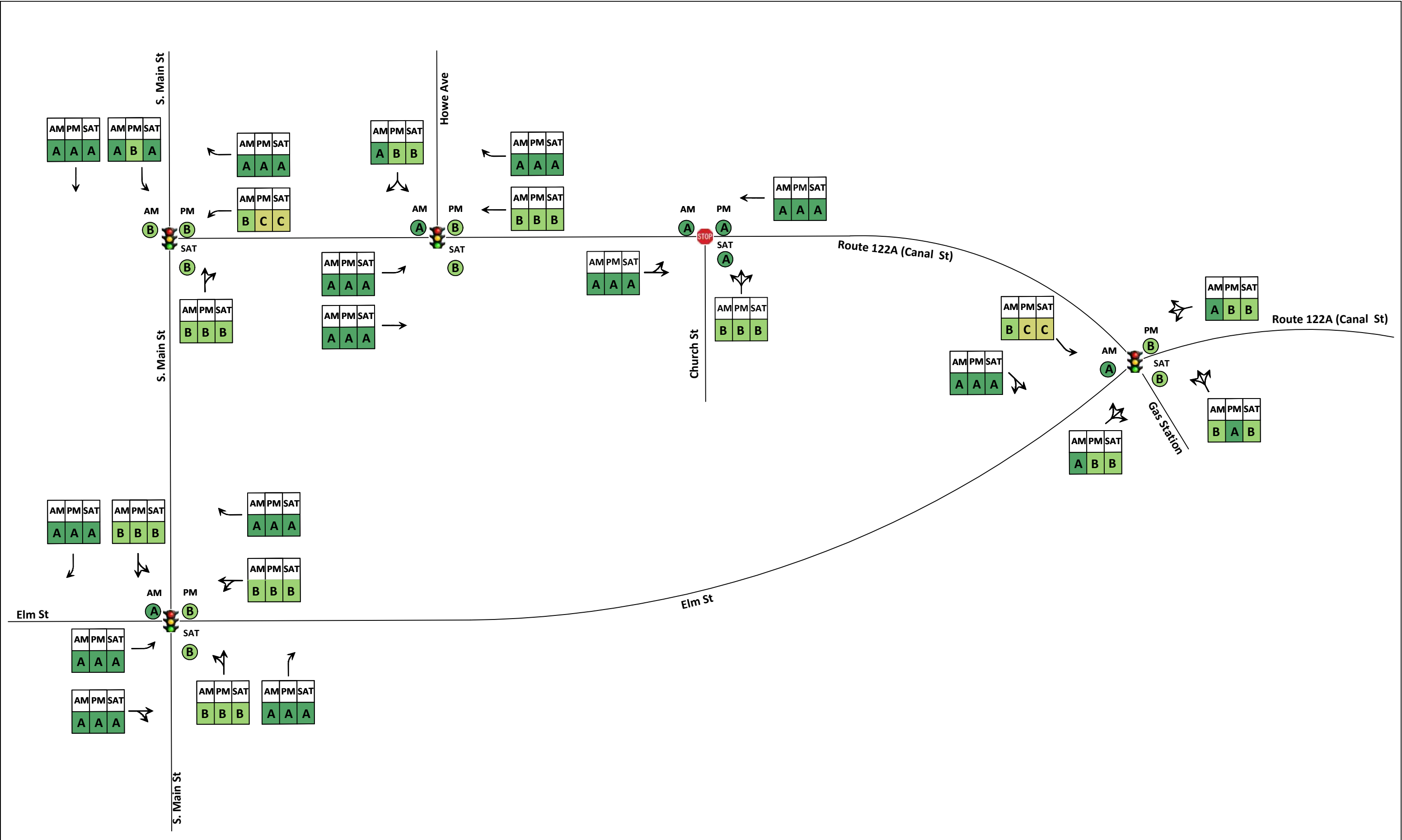


Figure 14 - Year 2021 (Existing) Level of Service (LOS)
 Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts

(X) Intersection LOS (X) Movement LOS
 A B C D E F



NOT TO SCALE
 April, 2021

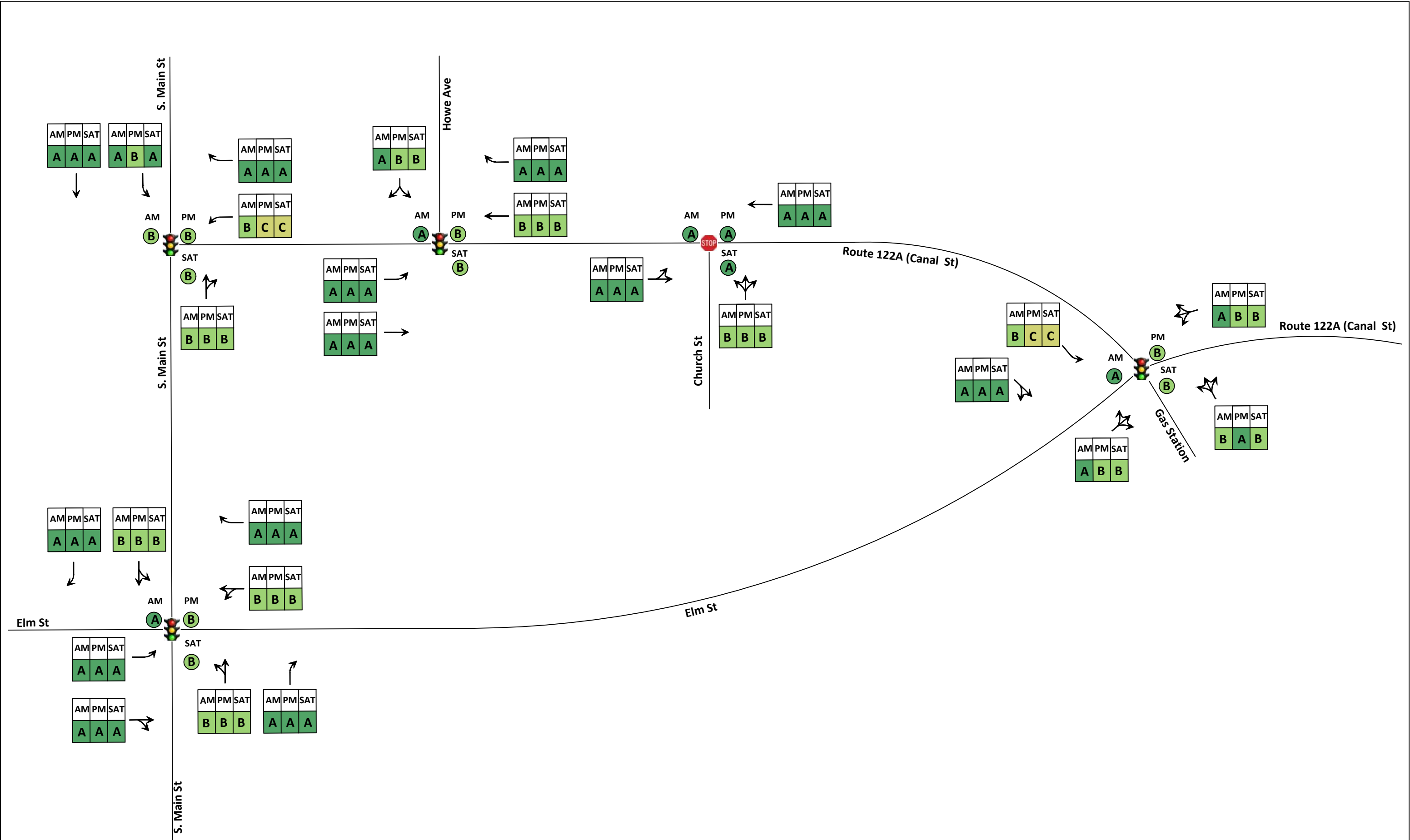


Figure 15 - Year 2025 (No-Build) Level of Service (LOS)
 Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts

(X) Intersection LOS (X) Movement LOS
 A B C D E F

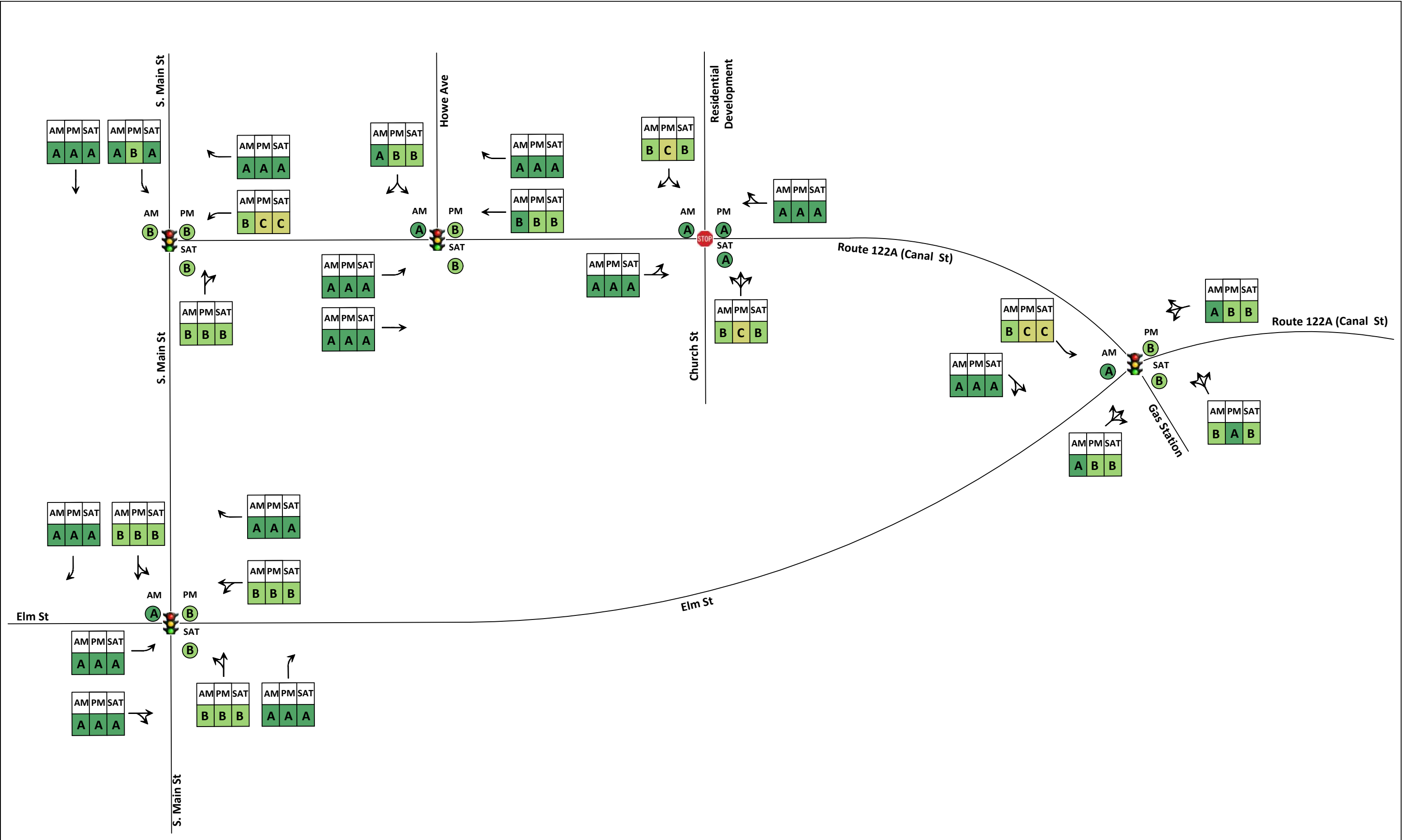
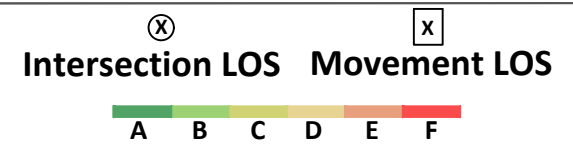


Figure 16 - Year 2025 (Build) Level of Service (LOS)
 Canal Street Residential Development - Traffic Impact Study
 Millbury, Massachusetts



NOT TO SCALE
 April, 2021

5 CONCLUSIONS

5.1 CONCLUSIONS & RECOMMENDATIONS

WSP has completed the traffic operations and safety analysis for the proposed residential development and has reached the following conclusions:

- The proposed residential development will not generate significant traffic (20 trips in the AM peak, 27 trips in the PM peak, and 32 trips during the Saturday mid-day peak) to impact operating conditions at study intersections.
- The crash history, collected from MassDOT’s Crash Query and Visualization between January 1st, 2015-December 31st, 2019, does not indicate safety concern at study intersections serving the site. There is no significant and/or notable pattern of crashes on study roadways were identified.
- Intersection sight distances for proposed development driveway meet MassDOT design criteria.
- Traffic capacity results show that the intersections will continue to operate under acceptable conditions with LOS C or better during the build conditions. However, it is recommended that once the development is fully operational, the signalized intersections should be monitored and the signal timings adjusted to reduce any delays, if needed.
- It is recommended to install a stop sign control at the proposed site driveway approach to Route 122A (Canal Street)
- It is recommended that a crosswalk be painted at the developmet site driveway/Church Street intersection connecting sidewalks on both sides of Route 122A (Canal Street). ADA accessbile ramps should be constructed at the proposed crosswalk.

APPENDIX

A

PROJECT SITE PLAN



APPENDIX

B

CRASH DATA



Route 122A (Canal Street) & Elm Street

| Crash Number | City/Town Name | Crash Date | Crash Severity | Crash Time | Crash Year | Max Injury Severity Reported | Number of Vehicles | Age of Driver - Youngest Known | Age of Driver - Oldest Known | Driver Contributing Circumstances (All Drivers) | First Harmful Event | Light Conditions | Manner of Collision | MassDOT District | RMV Document Numbers | Road Surface Condition | Total Fatalities | Total Non-Fatal Injuries | Traffic Control Device Type | Vehicle Actions Prior to Crash (All Vehicles) | Vehicle Configuration (All Vehicles) | Weather Conditions |
|--------------|----------------|------------|-------------------------------------|------------|------------|---------------------------------------|--------------------|--------------------------------|------------------------------|---|---|------------------------|---------------------|------------------|----------------------|------------------------|------------------|--------------------------|-----------------------------|---|---|---|
| 4050753 | MILLBURY | 02/22/2015 | Non-fatal injury | 6:31 PM | 2015 | Non-fatal injury - Possible | 2 | 16-17 | 21-24 | D1: (Inattention) / D2: (No improper driving) | Collision with motor vehicle in traffic | Dark - lighted roadway | Angle | 3 | PR201507200418 | Dry | 0 | 1 | Traffic control signal | V1: Travelling straight ahead / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4052601 | MILLBURY | 03/03/2015 | Non-fatal injury | 9:36 PM | 2015 | Non-fatal injury - Non-incapacitating | 2 | 16-17 | 55-64 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Dark - lighted roadway | Angle | 3 | PR201511200114 | Snow | 0 | 1 | No controls | V1: Travelling straight ahead / V2: Turning left | V1:(Passenger car) / V2:(Passenger car) | Snow/Sheet, hail (freezing rain or drizzle) |
| 4056645 | MILLBURY | 02/03/2015 | Property damage only (none injured) | 5:30 PM | 2015 | No injury | 2 | 16-17 | 65-74 | D1: (Inattention) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Rear-end | 3 | PR201521900234 | Dry | 0 | 0 | No controls | V1: Travelling straight ahead / V2: Slowing or stopped in traffic | V1:Light truck/van, mini-van, pickup, sport utility) / V2:(Passenger car) | Clear |
| 4175749 | MILLBURY | 02/09/2016 | Property damage only (none injured) | 6:20 PM | 2016 | No injury | 3 | 21-24 | 55-64 | D1: (No improper driving) / D2: (No improper driving) / D3: (Unknown) | Collision with motor vehicle in traffic | Dark - lighted roadway | Rear-end | 3 | PR201605500408 | Wet | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic / V3: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) / V3:(Passenger car) | Clear |
| 4176451 | MILLBURY | 03/08/2016 | Property damage only (none injured) | 5:34 PM | 2016 | No injury | 2 | 16-17 | 55-64 | D1: (No improper driving) / D2: (Inattention) | Collision with motor vehicle in traffic | Dark - lighted roadway | Rear-end | 3 | PR201605500929 | Dry | 0 | 0 | No controls | V1: Travelling straight ahead / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Cloudy |
| 4384618 | MILLBURY | 02/06/2017 | Non-fatal injury | 5:56 PM | 2017 | Non-fatal injury - Possible | 2 | 45-54 | 45-54 | D1: (No improper driving) / D2: (Other improper action) | Collision with parked motor vehicle | Dark - lighted roadway | Rear-end | 3 | PR201708200639 | Dry | 0 | 2 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4484011 | MILLBURY | 11/03/2017 | Property damage only (none injured) | 6:43 PM | 2017 | No injury | 2 | 55-64 | 75-84 | D1: (Failed to yield right of way) / D2: (No improper driving) | Collision with motor vehicle in traffic | Dark - lighted roadway | Angle | 3 | PR201732001008 | Dry | 0 | 0 | Yield signs | V1: Turning right / V2: Turning left | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4481626 | MILLBURY | 11/22/2017 | Non-fatal injury | 11:44 AM | 2017 | Non-fatal injury | 2 | 18-20 | 55-64 | D1: (No improper driving) / D2: (Inattention) | Collision with motor vehicle in traffic | Daylight | Angle | 3 | PR201734000233 | Wet | 0 | 2 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Turning left | V1:(Passenger car) / V2:(Passenger car) | Rain |
| 4754870 | MILLBURY | 06/24/2019 | Property damage only (none injured) | 8:47 AM | 2019 | No Apparent Injury (0) | 2 | 45-54 | 55-64 | D1: (Inattention) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Rear-end | 3 | PW201917300901 | Dry | 0 | 0 | Traffic control signal | V1: Travelling straight ahead / V2: Slowing or stopped in traffic | V1:(Passenger car) / V2:(Tractor/semi-trailer) | Clear |

Route 122A (Canal Street) & Howe Ave

| Crash Number | City/Town Name | Crash Date | Crash Severity | Crash Time | Crash Year | Max Injury Severity Reported | Number of Vehicles | Age of Driver - Youngest Known | Age of Driver - Oldest Known | Driver Contributing Circumstances (All Drivers) | First Harmful Event | Light Conditions | Manner of Collision | MassDOT District | RMV Document Numbers | Road Surface Condition | Total Fatalities | Total Non-Fatal Injuries | Traffic Control Device Type | Vehicle Actions Prior to Crash (All Vehicles) | Vehicle Configuration (All Vehicles) | Weather Conditions |
|--------------|----------------|------------|-------------------------------------|------------|------------|------------------------------|--------------------|--------------------------------|------------------------------|--|---|------------------------|------------------------|------------------|----------------------|------------------------|------------------|--------------------------|-----------------------------|---|--|--------------------|
| 4008007 | MILLBURY | 01/13/2015 | Property damage only (none injured) | 8:08 AM | 2015 | No injury | 2 | 55-64 | 55-64 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Sideswipe, same direct | 3 | PR201504800106 | Dry | 0 | 0 | No controls | V1: Travelling straight ahead / V2: Travelling straight ahead | V1:(Passenger car) / V2:Bus (seats for 16 or more, including driver)) | Clear |
| 4013840 | MILLBURY | 02/12/2015 | Property damage only (none injured) | 6:44 AM | 2015 | No injury | 2 | 21-24 | 25-34 | D1: (Unknown) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Angle | 3 | PR201505100347 | Dry | 0 | 0 | No controls | V1: Backing / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Cloudy |
| 4178488 | MILLBURY | 01/24/2016 | Property damage only (none injured) | 6:59 PM | 2016 | No injury | 2 | 25-34 | 65-74 | D1: (No improper driving) / D2: (Failure to keep in proper lane or running off road) | Collision with motor vehicle in traffic | Dark - lighted roadway | Angle | 3 | PR201605601031 | Dry | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Turning left | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4225544 | MILLBURY | 07/22/2016 | Property damage only (none injured) | 4:40 PM | 2016 | No injury | 2 | 25-34 | 55-64 | D1: (Unknown) / D2: (Unknown) | Collision with motor vehicle in traffic | Daylight | Angle | 3 | PR201620900124 | Dry | 0 | 0 | Traffic control signal | V1: Turning right / V2: Slowing or stopped in traffic | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4419387 | MILLBURY | 08/16/2017 | Non-fatal injury | 5:10 PM | 2017 | Non-fatal injury - Possible | 2 | 25-34 | 55-64 | D1: (Unknown) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Angle | 3 | PR201724900338 | Dry | 0 | 2 | Traffic control signal | V1: Travelling straight ahead / V2: Turning left | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4519050 | MILLBURY | 03/08/2018 | Property damage only (none injured) | 11:50 AM | 2018 | No injury | 2 | 25-34 | 45-54 | D1: (No improper driving) / D2: (Failure to keep in proper lane or running off road) | Collision with motor vehicle in traffic | Daylight | Head-on | 3 | PR201808500133 | Wet | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Turning left | V1:(Passenger car) / V2:Light truck/van, mini-van, pickup, sport utility)) | Cloudy |
| 4521621 | MILLBURY | 03/15/2018 | Property damage only (none injured) | 2:09 PM | 2018 | No injury | 2 | 25-34 | 25-34 | D1: (No improper driving) / D2: (Unknown) | Collision with motor vehicle in traffic | Daylight | Angle | 3 | PR201808000206 | Snow | 0 | 0 | Traffic control signal | V1: Travelling straight ahead / V2: Slowing or stopped in traffic | V1:Light truck/van, mini-van, pickup, sport utility) / V2:(Passenger car) | Snow |

Elm St & S. Main St

| Crash Number | City/Town Name | Crash Date | Crash Severity | Crash Time | Crash Year | Max Injury Severity Reported | Number of Vehicles | Age of Driver - Youngest Known | Age of Driver - Oldest Known | Driver Distracted By (All Vehicles) | First Harmful Event | Light Conditions | Manner of Collision | MassDOT District | RMV Document Numbers | Road Surface Condition | Total Fatalities | Total Non-Fatal Injuries | Traffic Control Device Type | Vehicle Actions Prior to Crash (All Vehicles) | Vehicle Configuration (All Vehicles) | Weather Conditions |
|--------------|----------------|------------|-------------------------------------|------------|------------|------------------------------|--------------------|--------------------------------|------------------------------|---|---|------------------------|------------------------|------------------|----------------------|------------------------|------------------|--------------------------|-----------------------------|---|--|--------------------|
| 4054904 | MILLBURY | 06/18/2015 | Property damage only (none injured) | 10:38 PM | 2015 | No injury | 2 | 16-17 | 21-24 | D1: Manually operating an electronic device / D2: Manually operating an electronic device | Collision with motor vehicle in traffic | Dark - lighted roadway | Angle | 3 | PR201506300150 | Dry | 0 | 0 | Traffic control signal | V1: Travelling straight ahead / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4156768 | MILLBURY | 10/16/2015 | Property damage only (none injured) | 8:43 AM | 2015 | No injury | 2 | 25-34 | 65-74 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Rear-end | 3 | PR201533000145 | Wet | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic | V1:(Passenger car) / V2:(Passenger car) | Rain |
| 4251147 | MILLBURY | 08/20/2016 | Property damage only (none injured) | 12:58 PM | 2016 | No injury | 2 | 25-34 | 45-54 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Rear-end | 3 | PR201626500113 | Dry | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Travelling straight ahead | V1:(Motorcycle) / V2:(Passenger car) | Clear |
| 4360378 | MILLBURY | 04/26/2017 | Non-fatal injury | 9:52 AM | 2017 | Non-fatal injury - Possible | 2 | 21-24 | 65-74 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Head-on | 3 | PR201712100130 | Wet | 0 | 2 | Traffic control signal | V1: Travelling straight ahead / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Rain/Cloudy |
| 4399330 | MILLBURY | 06/06/2017 | Property damage only (none injured) | 3:56 PM | 2017 | No injury | 2 | 65-74 | 65-74 | D1: (No improper driving) / D2: (No improper driving) | Collision with parked motor vehicle | Daylight | Sideswipe, same direct | 3 | PR201719900236 | Dry | 0 | 0 | No controls | V1: Parked / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4574017 | MILLBURY | 07/05/2018 | Property damage only (none injured) | 5:05 PM | 2018 | No injury | 2 | 25-34 | 55-64 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Rear-end | 3 | PR201819800543 | Dry | 0 | 0 | Traffic control signal | V1: Travelling straight ahead / V2: Travelling straight ahead | V1:(Passenger car) / V2:Light truck/van, mini-van, pickup, sport utility)) | Clear |
| 4627981 | MILLBURY | 10/21/2018 | Property damage only (none injured) | 1:01 PM | 2018 | No injury | 2 | 55-64 | 65-74 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Rear-end | 3 | PR201831800149 | Dry | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4757733 | MILLBURY | 09/22/2019 | Property damage only (none injured) | 9:47 PM | 2019 | No Apparent Injury (0) | 2 | 45-54 | 45-54 | D1: (No improper driving) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Front to Front | 3 | PW201928000579 | Dry | 0 | 0 | Traffic control signal | V1: Slowing or stopped in traffic / V2: Turning left | V1:(Passenger car) / V2:(Passenger car) | Clear |

Route 122A (Canal St) & S. Main St

| Crash Number | City/Town Name | Crash Date | Crash Severity | Crash Time | Crash Year | Max Injury Severity Reported | Number of Vehicles | Age of Driver - Youngest Known | Age of Driver - Oldest Known | Driver Contributing Circumstances (All Drivers) | First Harmful Event | Light Conditions | Manner of Collision | MassDOT District | RMV Document Numbers | Road Surface Condition | Total Fatalities | Total Non-Fatal Injuries | Traffic Control Device Type | Vehicle Actions Prior to Crash (All Vehicles) | Vehicle Configuration (All Vehicles) | Weather Conditions |
|--------------|----------------|------------|-------------------------------------|------------|------------|------------------------------|--------------------|--------------------------------|------------------------------|---|---|------------------------|---------------------|------------------|----------------------|------------------------|------------------|--------------------------|-----------------------------|--|--|--------------------|
| 4069278 | MILLBURY | 07/27/2015 | Property damage only (none injured) | 3:57 PM | 2015 | No injury | 2 | 35-44 | 55-64 | D1: (Inattention) / D2: (No improper driving) | Collision with motor vehicle in traffic | Daylight | Angle | 3 | PR201516001247 | Dry | 0 | 0 | Traffic control signal | V1: Turning left / V2: Travelling straight ahead | V1:(Passenger car) / V2:(Passenger car) | Clear |
| 4757965 | MILLBURY | 09/10/2019 | Property damage only (none injured) | 12:34 AM | 2019 | No Apparent Injury (0) | 2 | 25-34 | 25-34 | D1: (Inattention) | Collision with parked motor vehicle | Dark - lighted roadway | Rear-end | 3 | PW201928000583 | Dry | 0 | 0 | No controls | V1: Travelling straight ahead / V2: Parked | V1:(Passenger car) / V2:Light truck/van, mini-van, pickup, sport utility)) | Clear |

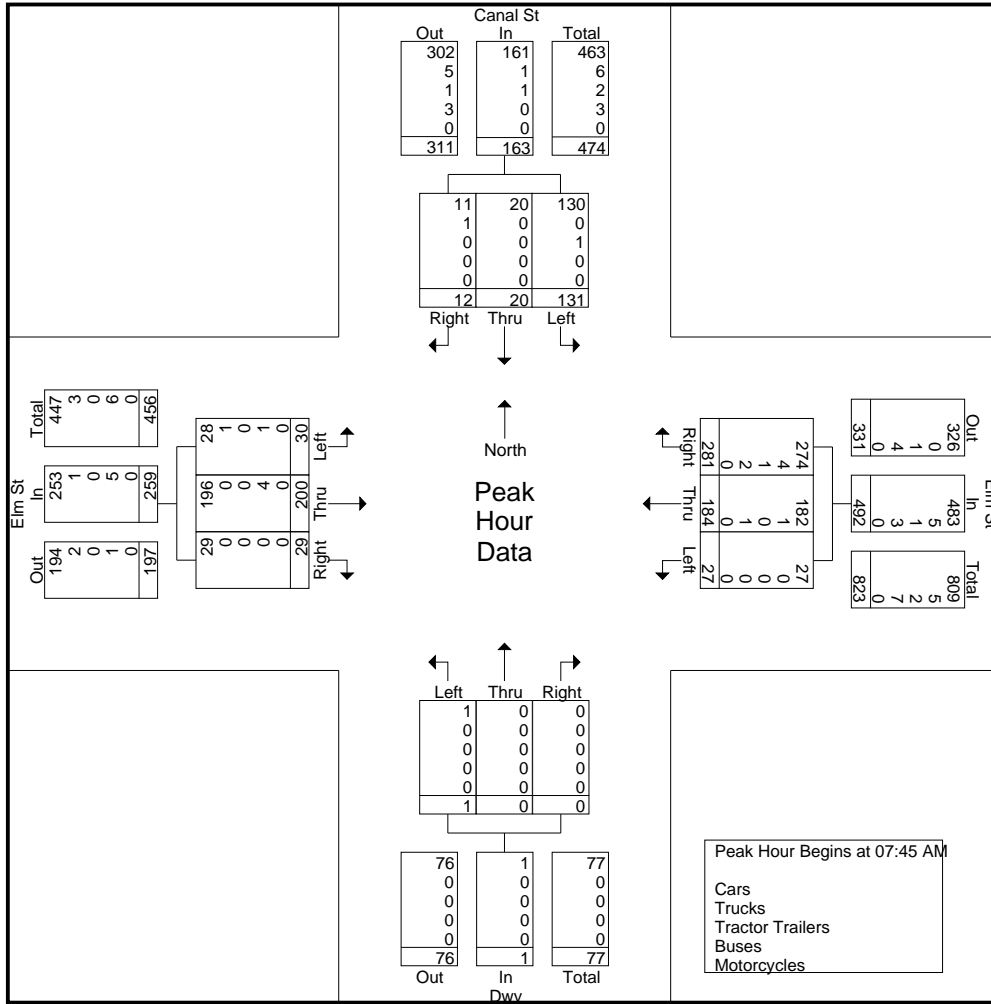
APPENDIX

C

TRAFFIC COUNTS



N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



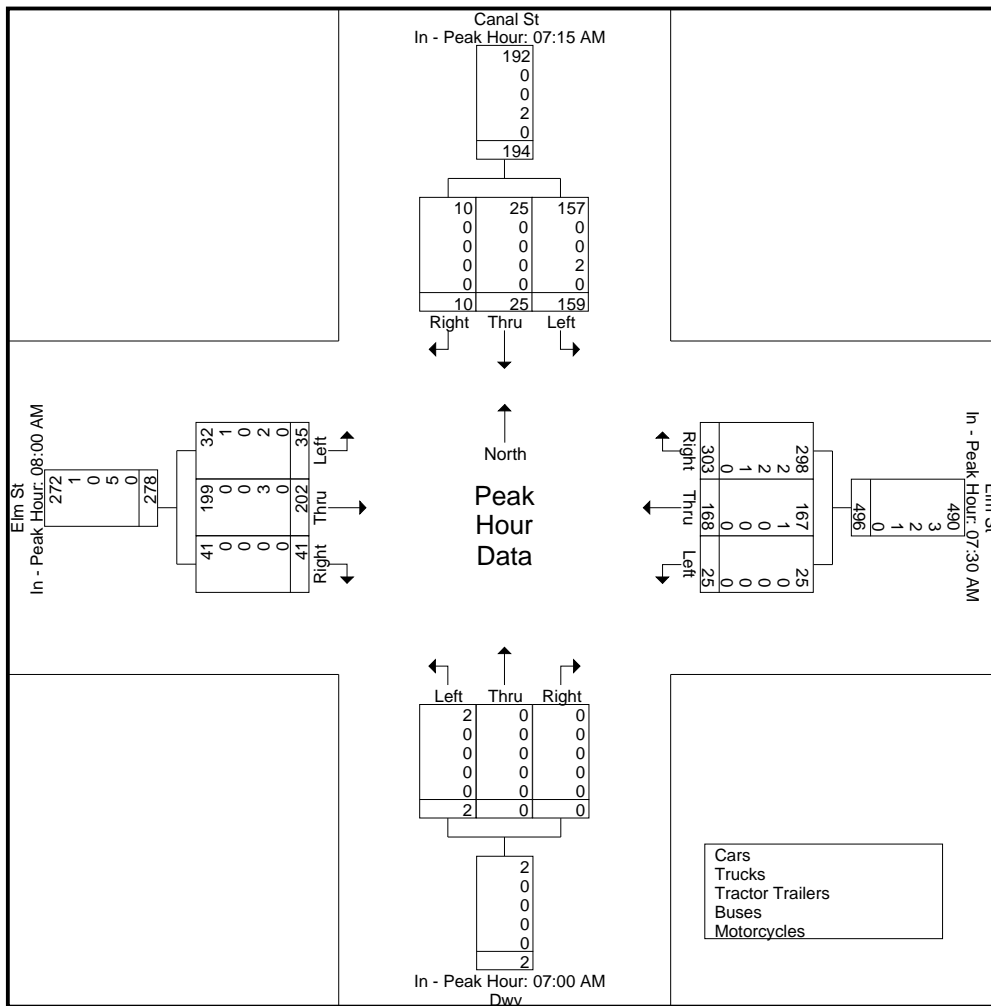
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | | 07:30 AM | | | | 07:00 AM | | | | 08:00 AM | | | |
|--------------------|-----------|----------|----------|-----------|----------|-----------|-----------|------------|----------|------|------|----------|-----------|-----------|-----------|-----------|
| +0 mins. | 36 | 7 | 1 | 44 | 5 | 35 | 90 | 130 | 0 | 0 | 0 | 0 | 8 | 51 | 8 | 67 |
| +15 mins. | 46 | 9 | 1 | 56 | 8 | 51 | 76 | 135 | 0 | 0 | 0 | 0 | 6 | 50 | 9 | 65 |
| +30 mins. | 38 | 6 | 6 | 50 | 6 | 31 | 62 | 99 | 1 | 0 | 0 | 1 | 12 | 55 | 10 | 77 |
| +45 mins. | 39 | 3 | 2 | 44 | 6 | 51 | 75 | 132 | 1 | 0 | 0 | 1 | 9 | 46 | 14 | 69 |
| Total Volume | 159 | 25 | 10 | 194 | 25 | 168 | 303 | 496 | 2 | 0 | 0 | 2 | 35 | 202 | 41 | 278 |
| % App. Total | 82 | 12.9 | 5.2 | | 5 | 33.9 | 61.1 | | 100 | 0 | 0 | | 12.6 | 72.7 | 14.7 | |
| PHF | .864 | .694 | .417 | .866 | .781 | .824 | .842 | .919 | .500 | .000 | .000 | .500 | .729 | .918 | .732 | .903 |
| Cars | 157 | 25 | 10 | 192 | 25 | 167 | 298 | 490 | 2 | 0 | 0 | 2 | 32 | 199 | 41 | 272 |
| % Cars | 98.7 | 100 | 100 | 99 | 100 | 99.4 | 98.3 | 98.8 | 100 | 0 | 0 | 100 | 91.4 | 98.5 | 100 | 97.8 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0.6 | 0.7 | 0.6 | 0 | 0 | 0 | 0 | 2.9 | 0 | 0 | 0.4 |
| Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 5 |
| % Buses | 1.3 | 0 | 0 | 1 | 0 | 0 | 0.3 | 0.2 | 0 | 0 | 0 | 0 | 5.7 | 1.5 | 0 | 1.8 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 3

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

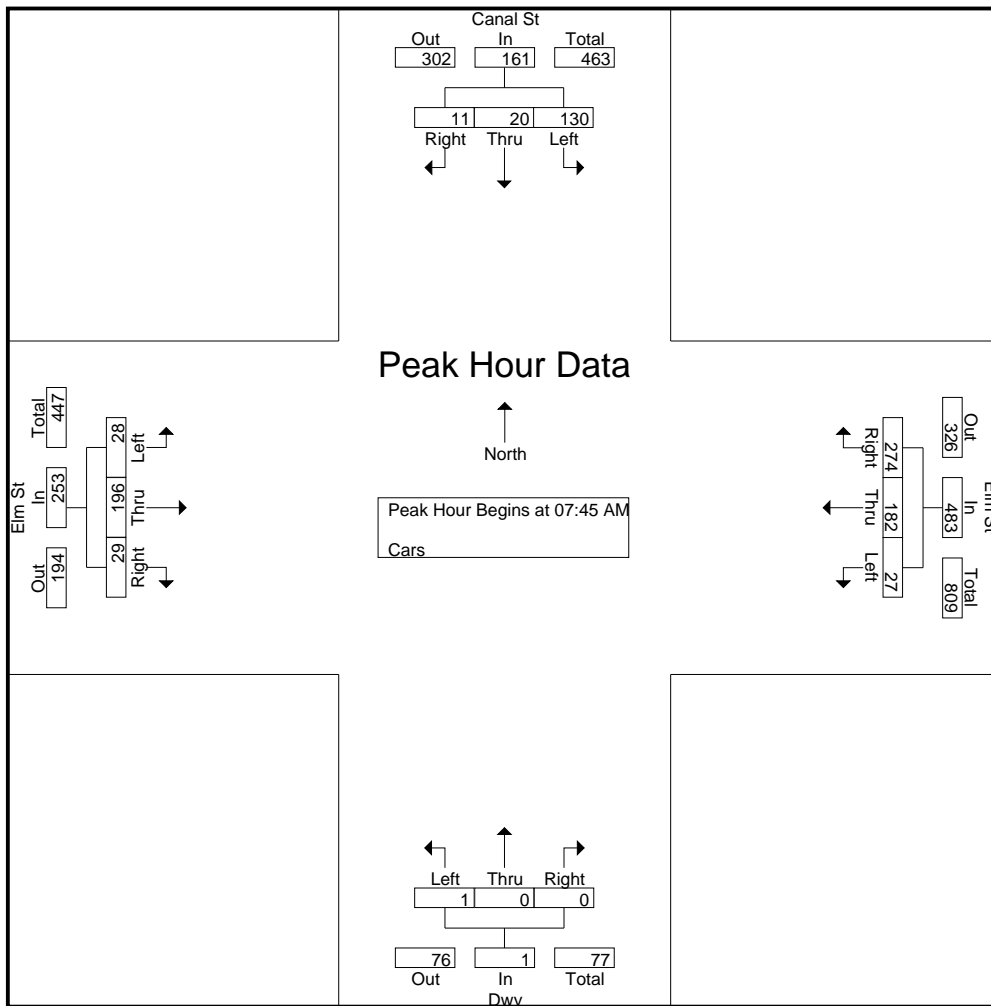
File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

Groups Printed- Cars

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|------------------------|-----------|-----------|---------------------|------------|------------|-------------------|----------|----------|---------------------|------------|-----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 32 | 6 | 2 | 11 | 25 | 59 | 0 | 0 | 0 | 1 | 41 | 10 | 187 |
| 07:15 AM | 34 | 7 | 1 | 5 | 30 | 90 | 0 | 0 | 0 | 7 | 41 | 4 | 219 |
| 07:30 AM | 46 | 9 | 1 | 5 | 35 | 88 | 1 | 0 | 0 | 3 | 41 | 8 | 237 |
| 07:45 AM | 38 | 6 | 6 | 8 | 50 | 74 | 1 | 0 | 0 | 4 | 43 | 2 | 232 |
| Total | 150 | 28 | 10 | 29 | 140 | 311 | 2 | 0 | 0 | 15 | 166 | 24 | 875 |
| 08:00 AM | 39 | 3 | 2 | 6 | 31 | 62 | 0 | 0 | 0 | 7 | 48 | 8 | 206 |
| 08:15 AM | 21 | 3 | 1 | 6 | 51 | 74 | 0 | 0 | 0 | 5 | 50 | 9 | 220 |
| 08:30 AM | 32 | 8 | 2 | 7 | 50 | 64 | 0 | 0 | 0 | 12 | 55 | 10 | 240 |
| 08:45 AM | 34 | 4 | 5 | 6 | 37 | 66 | 0 | 0 | 0 | 8 | 46 | 14 | 220 |
| Total | 126 | 18 | 10 | 25 | 169 | 266 | 0 | 0 | 0 | 32 | 199 | 41 | 886 |
| Grand Total | 276 | 46 | 20 | 54 | 309 | 577 | 2 | 0 | 0 | 47 | 365 | 65 | 1761 |
| Apprch % | 80.7 | 13.5 | 5.8 | 5.7 | 32.9 | 61.4 | 100 | 0 | 0 | 9.9 | 76.5 | 13.6 | |
| Total % | 15.7 | 2.6 | 1.1 | 3.1 | 17.5 | 32.8 | 0.1 | 0 | 0 | 2.7 | 20.7 | 3.7 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|----------|----------|------------|---------------------|-----------|-----------|------------|-------------------|------|-------|------------|---------------------|-----------|-----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 38 | 6 | 6 | 50 | 8 | 50 | 74 | 132 | 1 | 0 | 0 | 1 | 4 | 43 | 2 | 49 | 232 |
| 08:00 AM | 39 | 3 | 2 | 44 | 6 | 31 | 62 | 99 | 0 | 0 | 0 | 0 | 7 | 48 | 8 | 63 | 206 |
| 08:15 AM | 21 | 3 | 1 | 25 | 6 | 51 | 74 | 131 | 0 | 0 | 0 | 0 | 5 | 50 | 9 | 64 | 220 |
| 08:30 AM | 32 | 8 | 2 | 42 | 7 | 50 | 64 | 121 | 0 | 0 | 0 | 0 | 12 | 55 | 10 | 77 | 240 |
| Total Volume | 130 | 20 | 11 | 161 | 27 | 182 | 274 | 483 | 1 | 0 | 0 | 1 | 28 | 196 | 29 | 253 | 898 |
| % App. Total | 80.7 | 12.4 | 6.8 | | 5.6 | 37.7 | 56.7 | | 100 | 0 | 0 | | 11.1 | 77.5 | 11.5 | | |
| PHF | .833 | .625 | .458 | .805 | .844 | .892 | .926 | .915 | .250 | .000 | .000 | .250 | .583 | .891 | .725 | .821 | .935 |

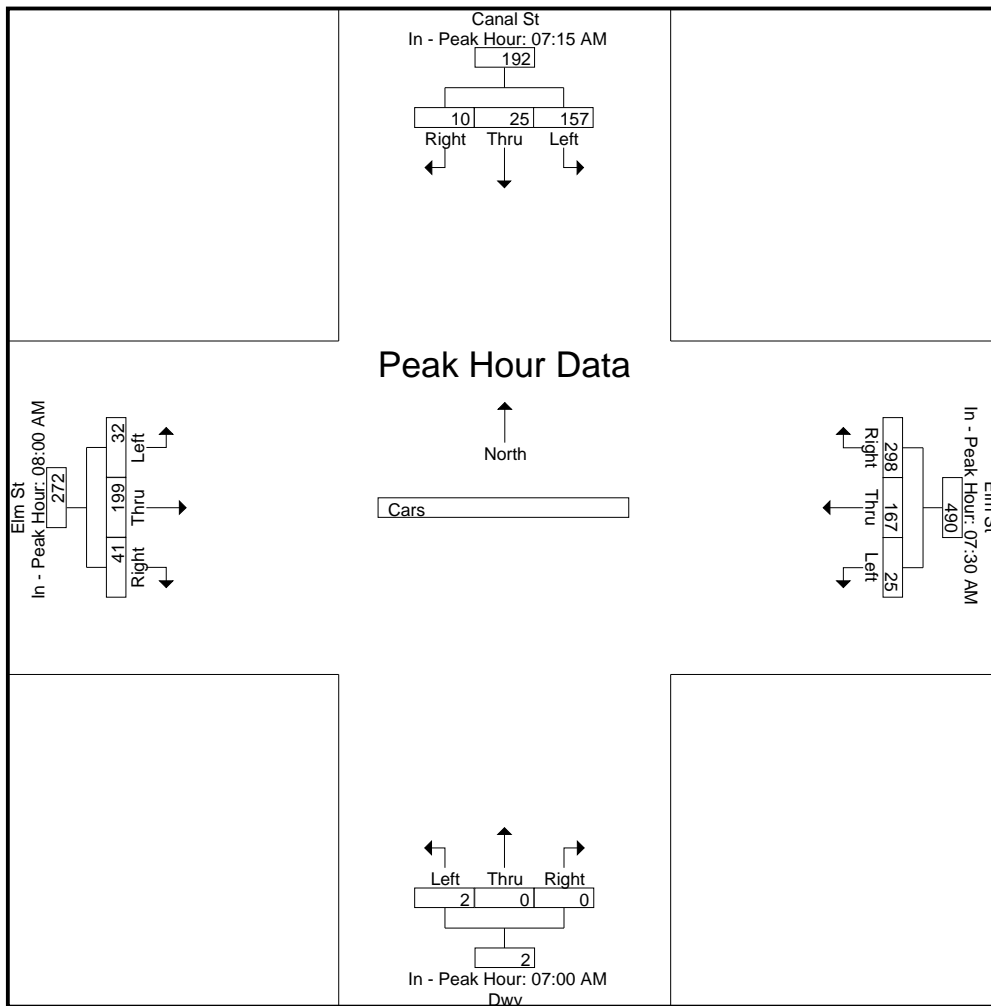
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | | 07:30 AM | | | | 07:00 AM | | | | 08:00 AM | | | |
|--------------|-----------|----------|----------|-----------|----------|-----------|-----------|------------|----------|------|------|----------|-----------|-----------|-----------|-----------|
| +0 mins. | 34 | 7 | 1 | 42 | 5 | 35 | 88 | 128 | 0 | 0 | 0 | 0 | 7 | 48 | 8 | 63 |
| +15 mins. | 46 | 9 | 1 | 56 | 8 | 50 | 74 | 132 | 0 | 0 | 0 | 0 | 5 | 50 | 9 | 64 |
| +30 mins. | 38 | 6 | 6 | 50 | 6 | 31 | 62 | 99 | 1 | 0 | 0 | 1 | 12 | 55 | 10 | 77 |
| +45 mins. | 39 | 3 | 2 | 44 | 6 | 51 | 74 | 131 | 1 | 0 | 0 | 1 | 8 | 46 | 14 | 68 |
| Total Volume | 157 | 25 | 10 | 192 | 25 | 167 | 298 | 490 | 2 | 0 | 0 | 2 | 32 | 199 | 41 | 272 |
| % App. Total | 81.8 | 13 | 5.2 | | 5.1 | 34.1 | 60.8 | | 100 | 0 | 0 | | 11.8 | 73.2 | 15.1 | |
| PHF | .853 | .694 | .417 | .857 | .781 | .819 | .847 | .928 | .500 | .000 | .000 | .500 | .667 | .905 | .732 | .883 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

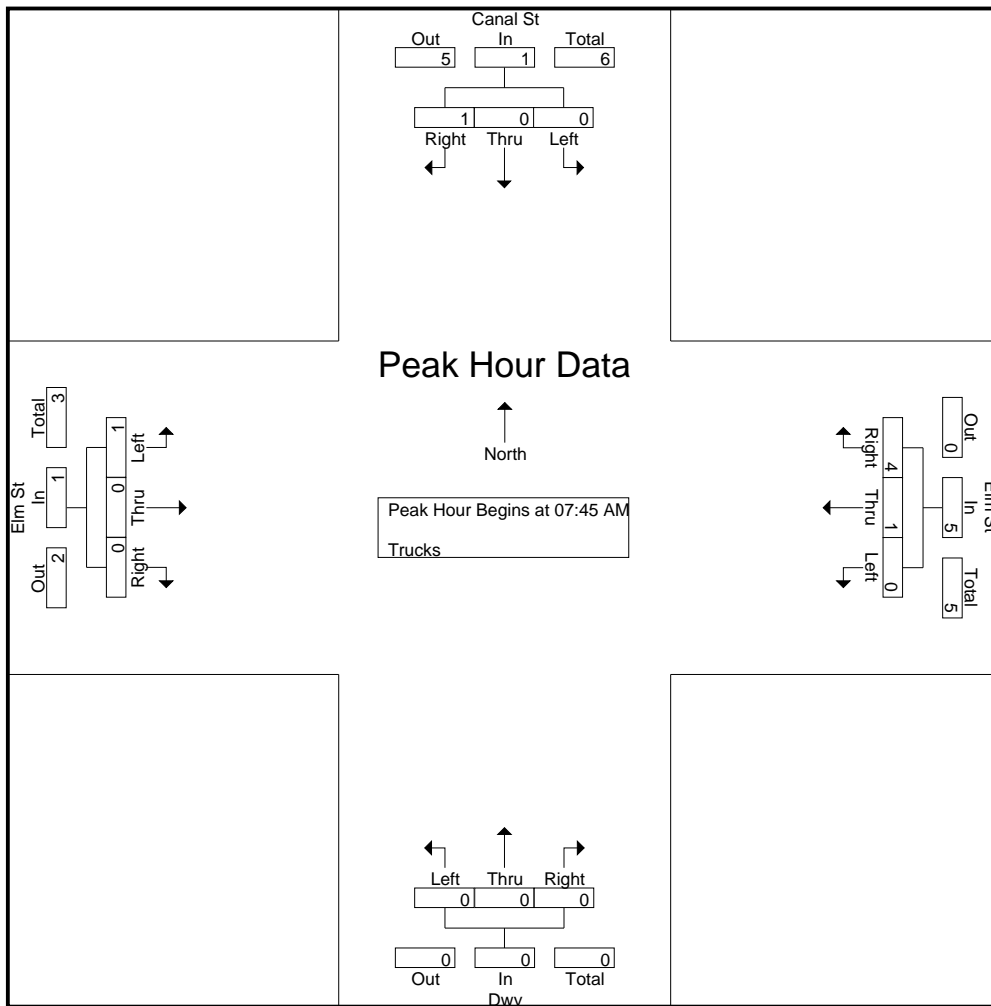
File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

Groups Printed- Trucks

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|---------------------|----------|----------|------------------|----------|----------|----------------|----------|----------|------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 6 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 08:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 08:45 AM | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 7 |
| Grand Total | 0 | 0 | 2 | 0 | 2 | 6 | 0 | 0 | 0 | 1 | 2 | 0 | 13 |
| Apprch % | 0 | 0 | 100 | 0 | 25 | 75 | 0 | 0 | 0 | 33.3 | 66.7 | 0 | |
| Total % | 0 | 0 | 15.4 | 0 | 15.4 | 46.2 | 0 | 0 | 0 | 7.7 | 15.4 | 0 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|---------------------|----------|------------|------------|------------------|-----------|-----------|------------|----------------|----------|----------|------------|------------------|----------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 08:15 AM | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total Volume | 0 | 0 | 1 | 1 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 7 |
| % App. Total | 0 | 0 | 100 | | 0 | 20 | 80 | | 0 | 0 | 0 | | 100 | 0 | 0 | | |
| PHF | .000 | .000 | .250 | .250 | .000 | .250 | .333 | .417 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .583 |

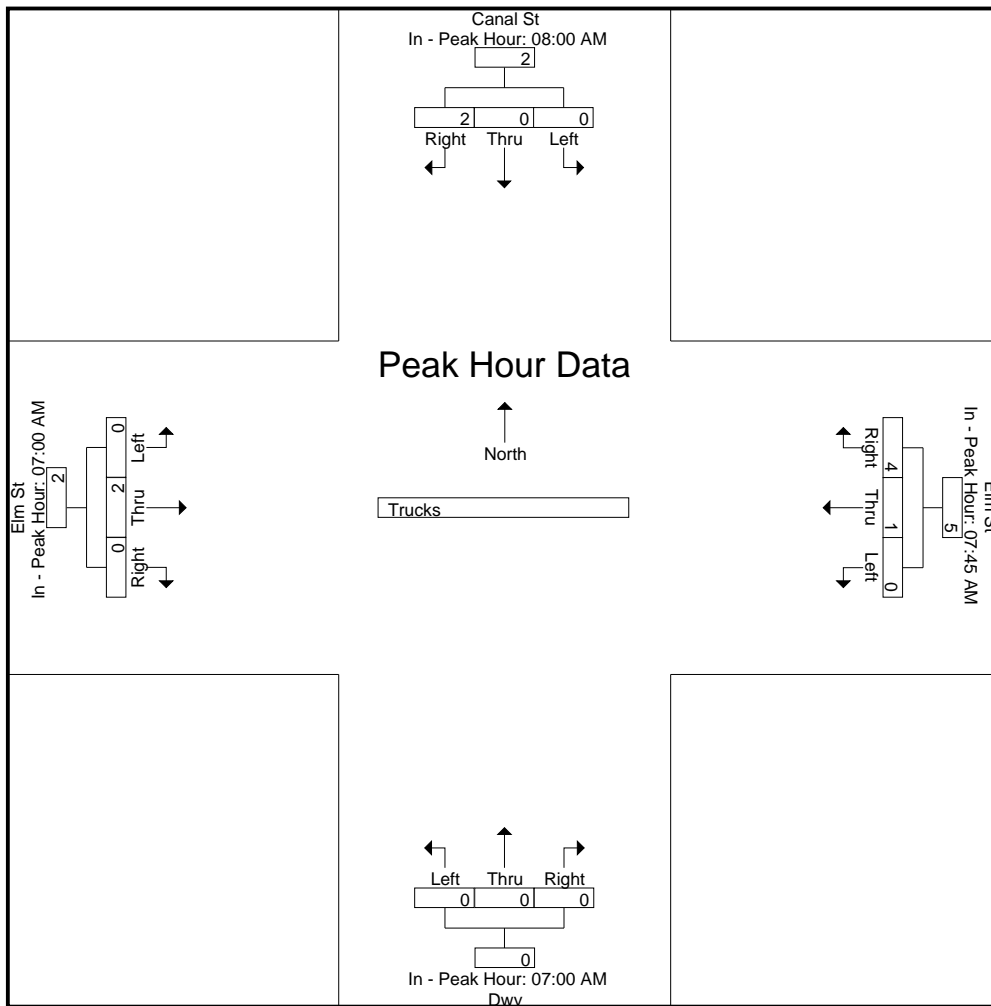
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



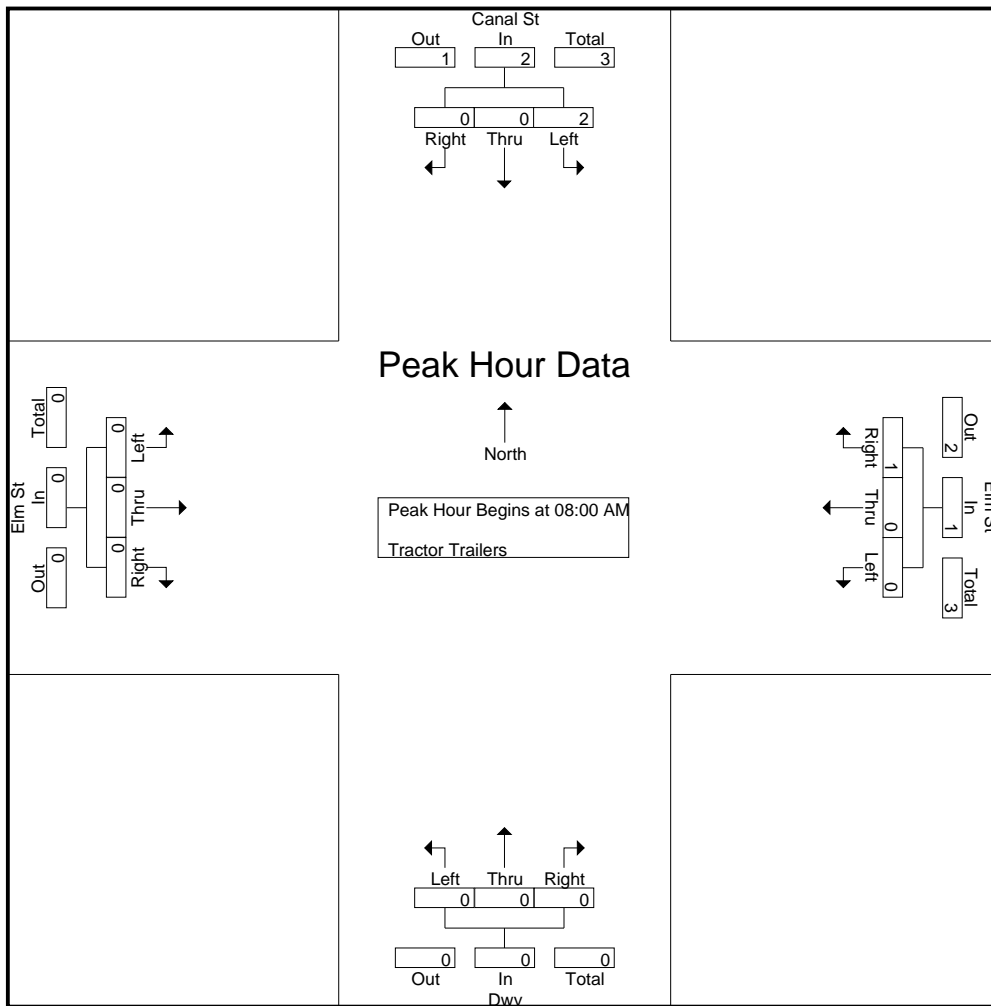
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | | 07:45 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +45 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 2 | 2 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| % App. Total | 0 | 0 | 100 | | 0 | 20 | 80 | | 0 | 0 | 0 | | 0 | 100 | 0 | |
| PHF | .000 | .000 | .500 | .500 | .000 | .250 | .333 | .417 | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .500 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



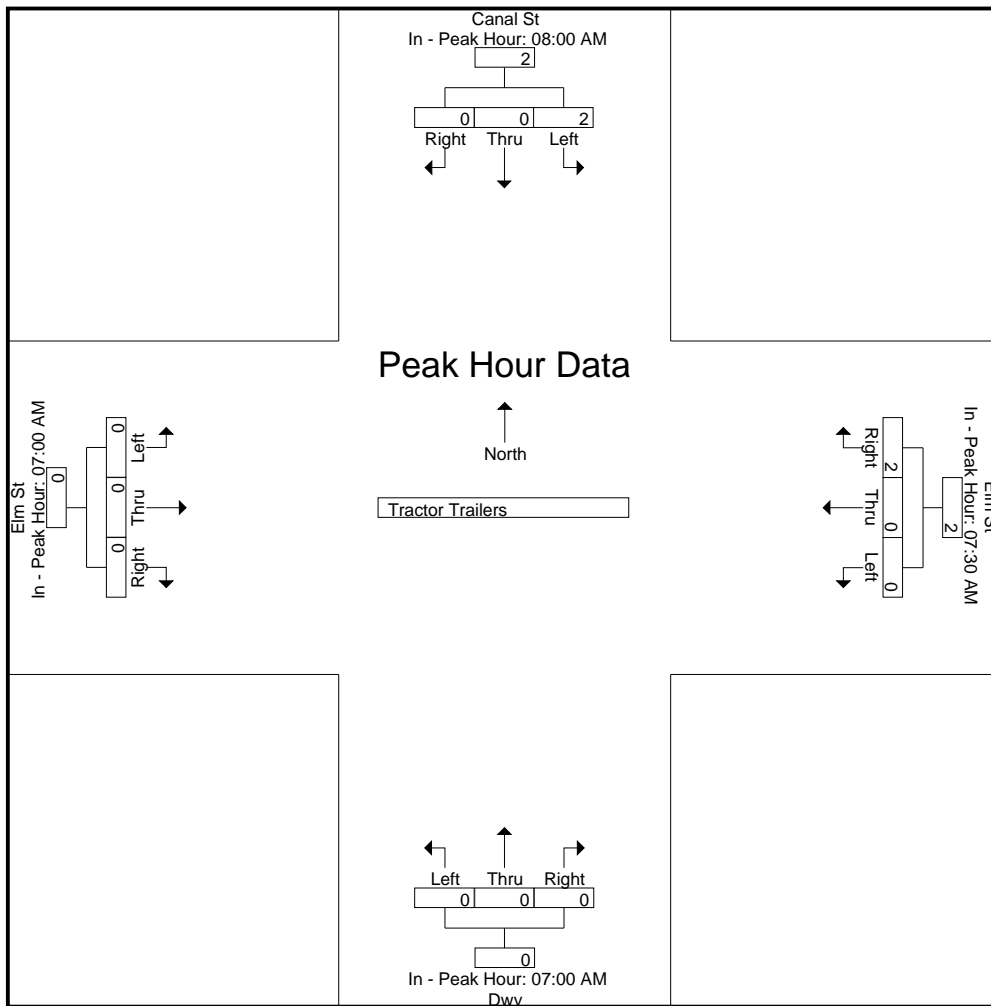
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | | 07:30 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PHF | .500 | .000 | .000 | .500 | .000 | .000 | .500 | .500 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

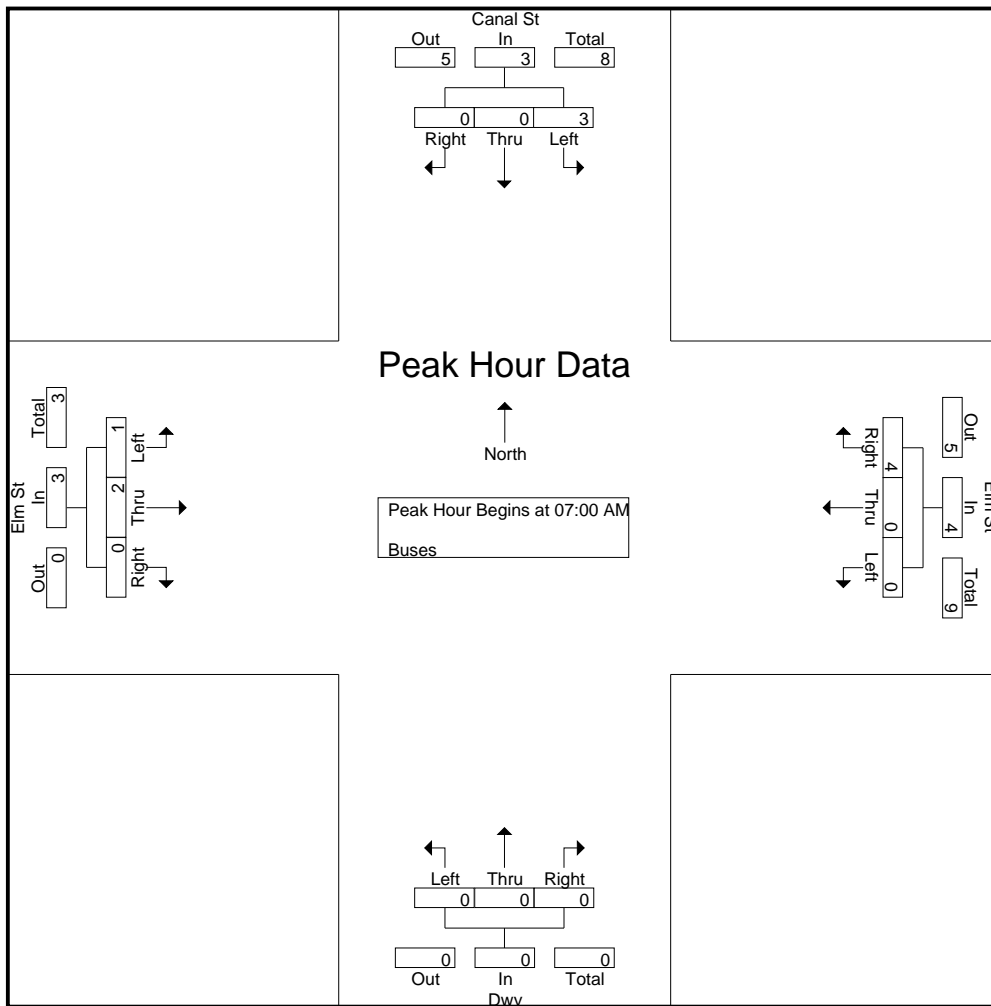
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Buses

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|------------------------|----------|----------|---------------------|----------|----------|-------------------|----------|----------|---------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 5 |
| 07:15 AM | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Total | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 2 | 0 | 10 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 3 | 0 | 7 |
| Grand Total | 3 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 3 | 5 | 0 | 17 |
| Apprch % | 100 | 0 | 0 | 0 | 16.7 | 83.3 | 0 | 0 | 0 | 37.5 | 62.5 | 0 | |
| Total % | 17.6 | 0 | 0 | 0 | 5.9 | 29.4 | 0 | 0 | 0 | 17.6 | 29.4 | 0 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|----------|----------|------------|---------------------|----------|----------|------------|-------------------|----------|----------|------------|---------------------|----------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 |
| 07:15 AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Total Volume | 3 | 0 | 0 | 3 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 10 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 33.3 | 66.7 | 0 | | |
| PHF | .375 | .000 | .000 | .375 | .000 | .000 | .333 | .333 | .000 | .000 | .000 | .000 | .250 | .500 | .000 | .750 | .500 |

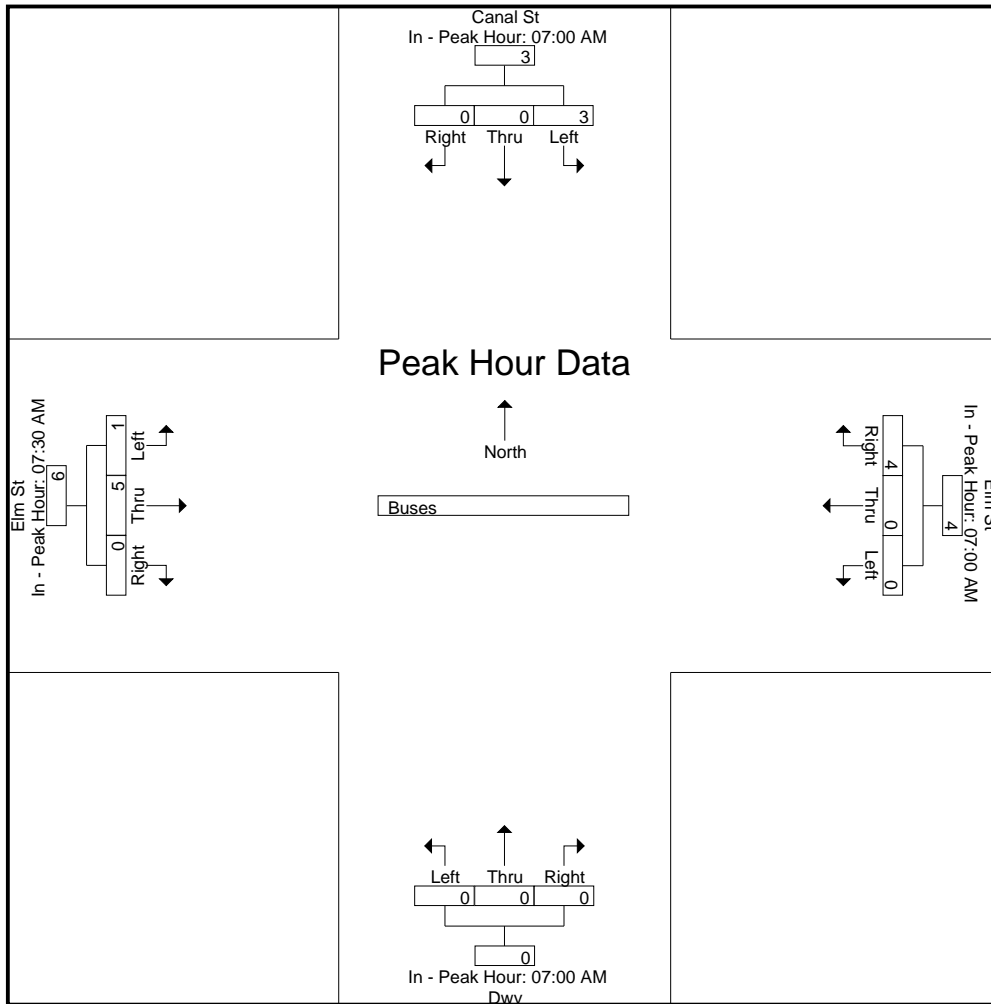
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E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



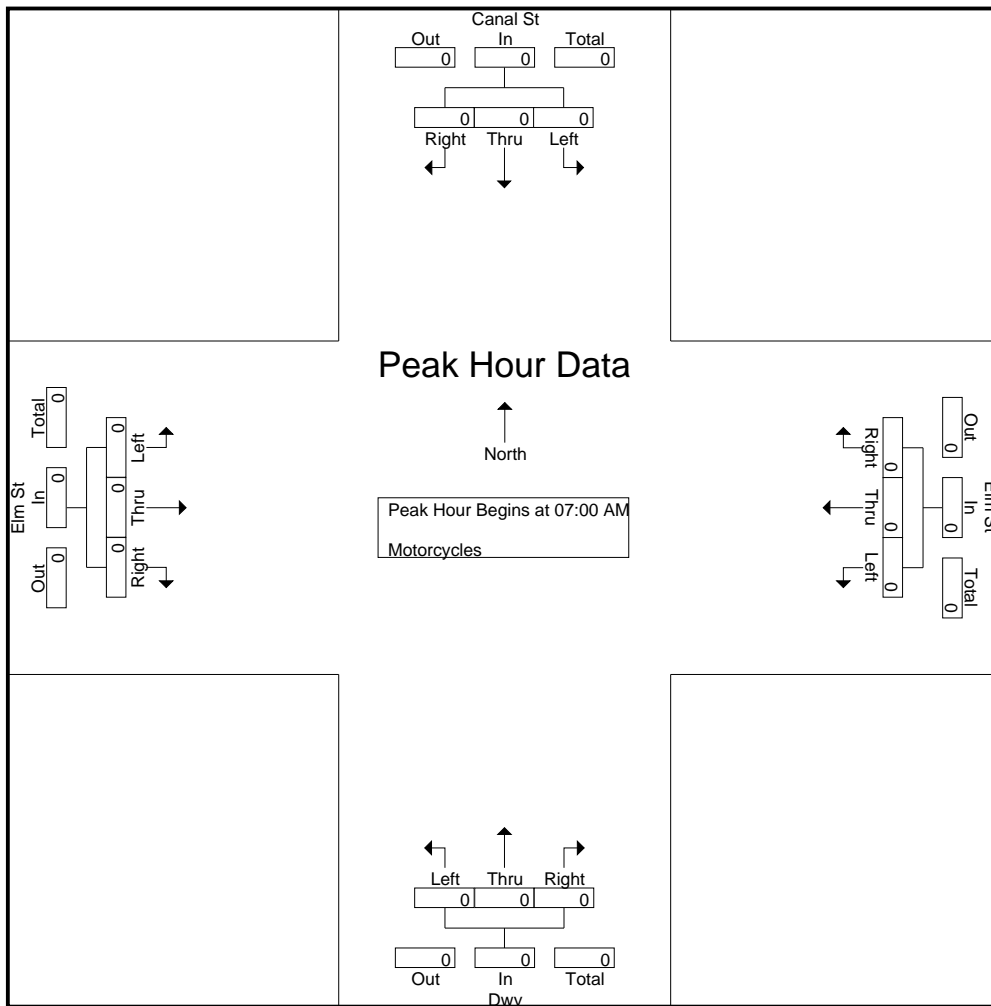
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:30 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total Volume | 3 | 0 | 0 | 3 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 6 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 16.7 | 83.3 | 0 | |
| PHF | .375 | .000 | .000 | .375 | .000 | .000 | .333 | .333 | .000 | .000 | .000 | .000 | .250 | .417 | .000 | .500 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



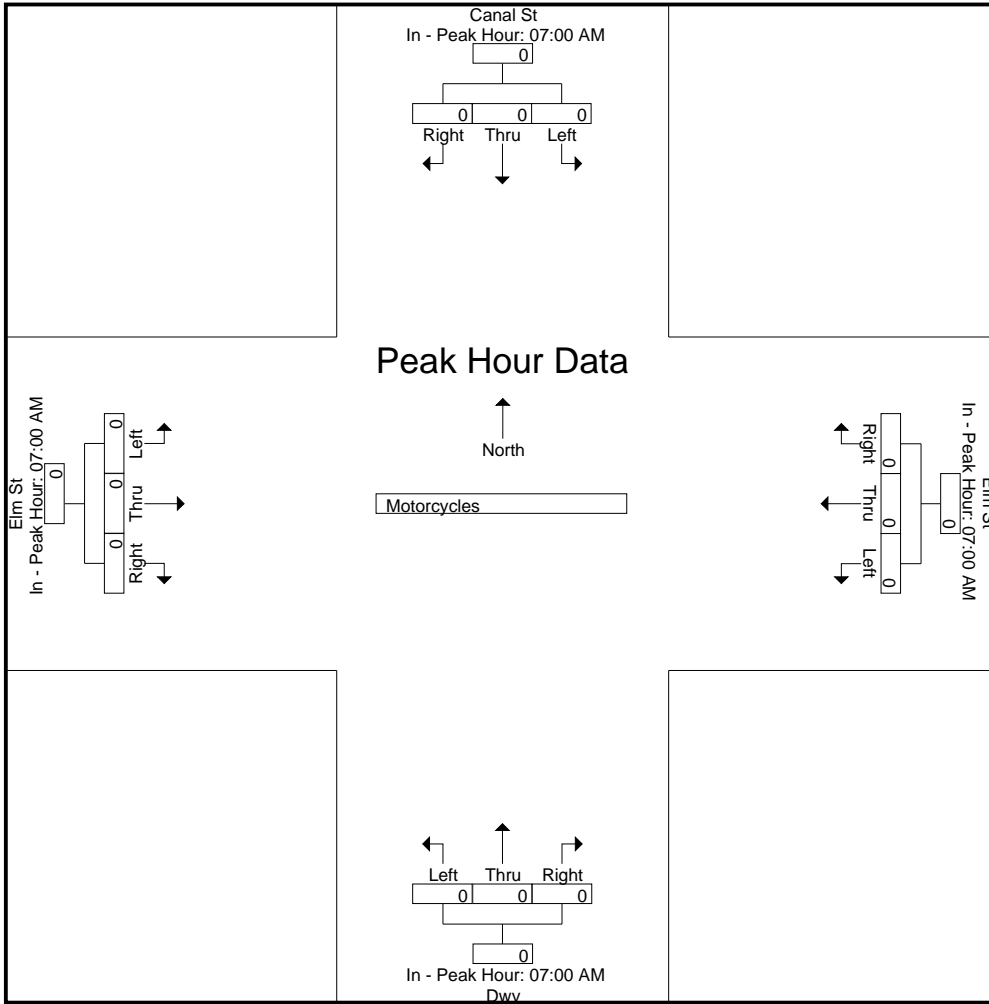
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

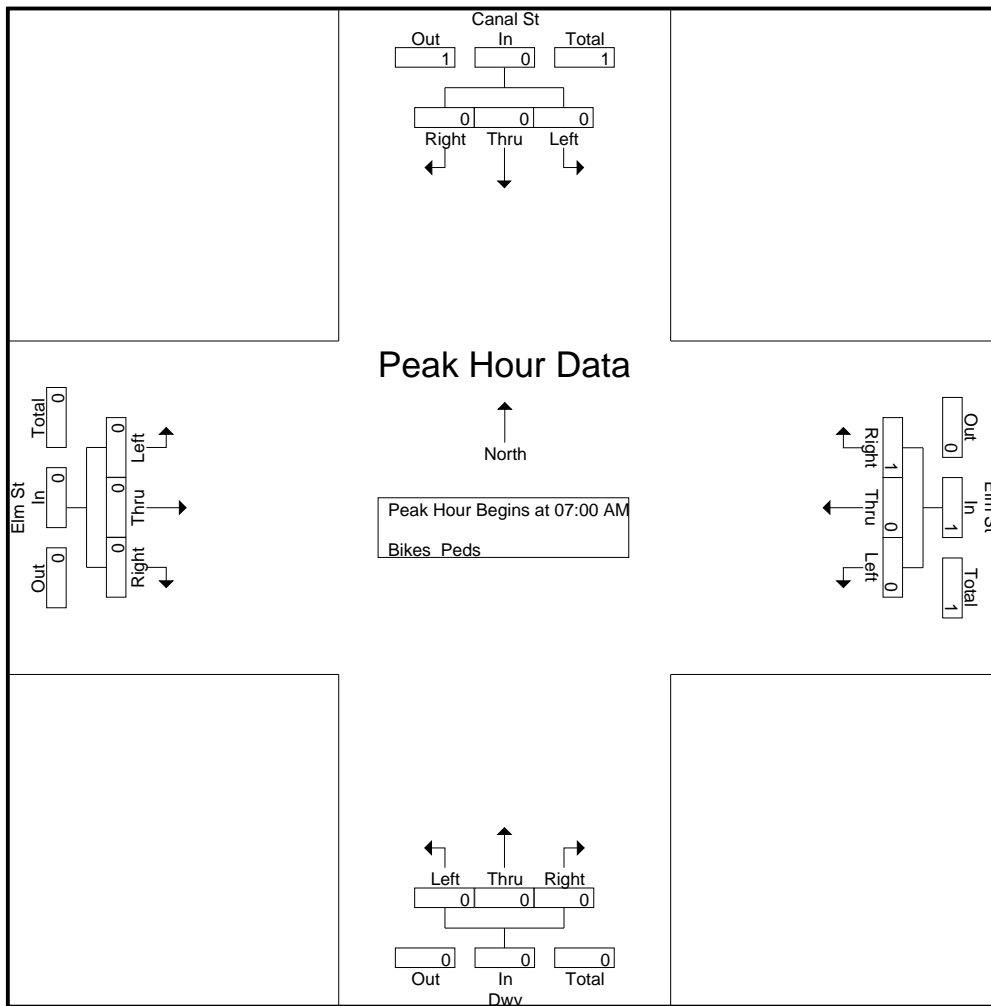
File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

Groups Printed- Bikes Peds

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|---------------------|------|-------|------|------------------|------|-------|------|----------------|------|-------|------|------------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| Apprch % | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 75 | 25 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|---------------------|------|-------|------------|------------------|------|-------|------------|----------------|------|-------|------------|------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |

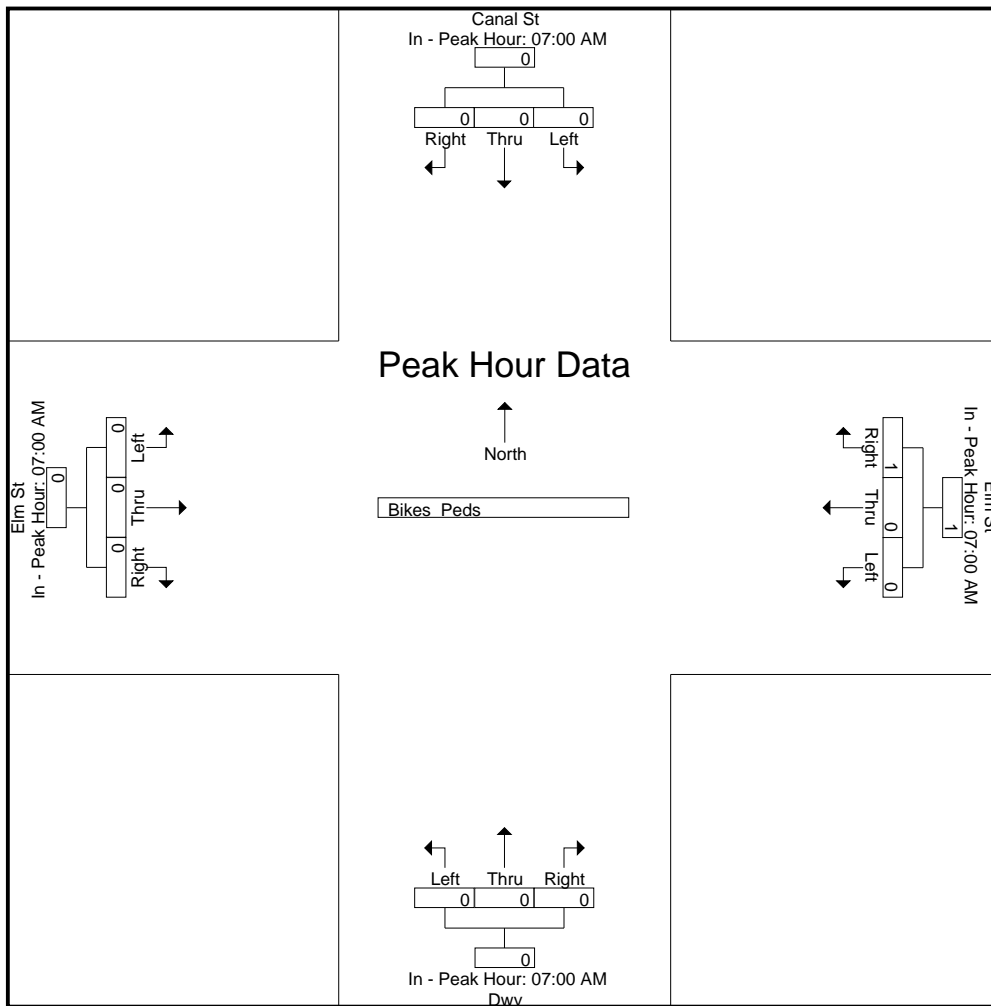
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



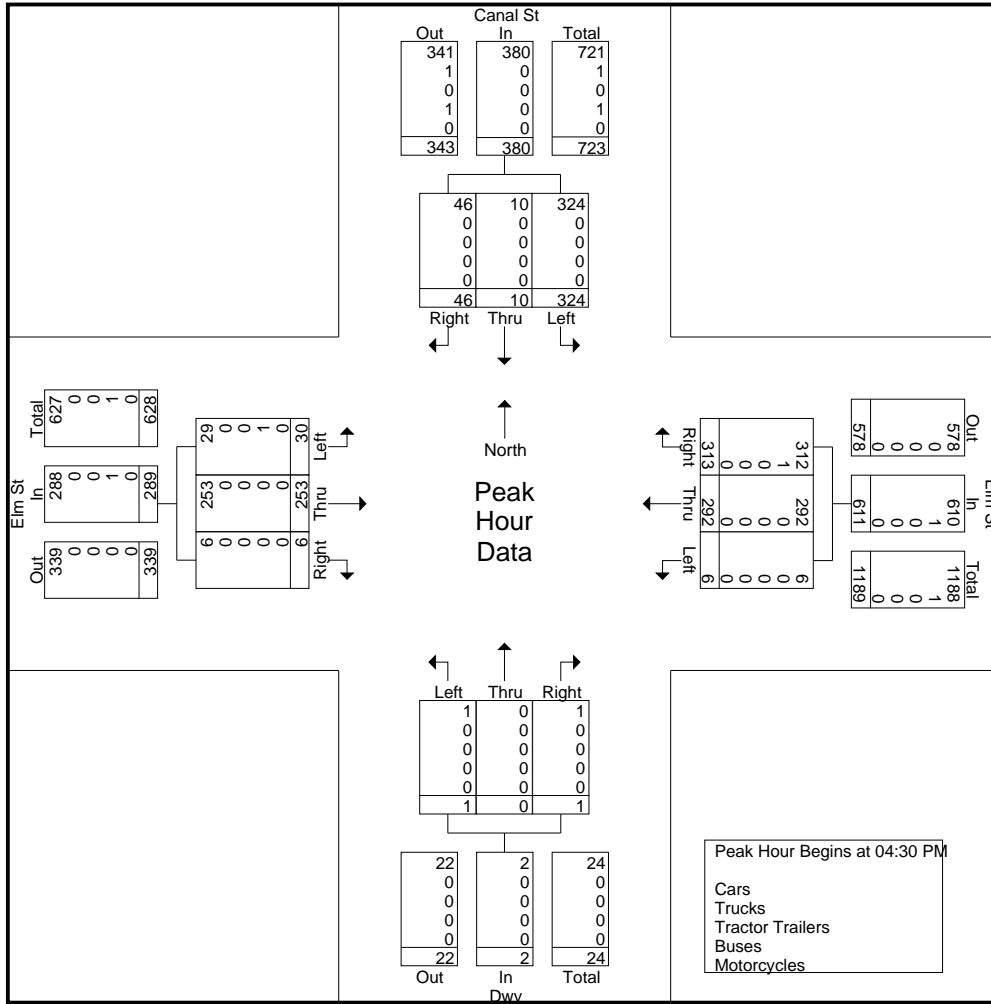
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:45 PM | | | | 04:00 PM | | | | 04:30 PM | | | |
|--------------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 81 | 4 | 10 | 95 | 1 | 87 | 71 | 159 | 0 | 0 | 1 | 1 | 10 | 72 | 1 | 83 |
| +15 mins. | 78 | 2 | 20 | 100 | 2 | 68 | 100 | 170 | 0 | 0 | 0 | 0 | 7 | 56 | 1 | 64 |
| +30 mins. | 90 | 3 | 11 | 104 | 2 | 60 | 77 | 139 | 0 | 0 | 0 | 0 | 7 | 58 | 2 | 67 |
| +45 mins. | 75 | 1 | 5 | 81 | 2 | 77 | 78 | 157 | 0 | 0 | 1 | 1 | 6 | 67 | 2 | 75 |
| Total Volume | 324 | 10 | 46 | 380 | 7 | 292 | 326 | 625 | 0 | 0 | 2 | 2 | 30 | 253 | 6 | 289 |
| % App. Total | 85.3 | 2.6 | 12.1 | | 1.1 | 46.7 | 52.2 | | 0 | 0 | 100 | | 10.4 | 87.5 | 2.1 | |
| PHF | .900 | .625 | .575 | .913 | .875 | .839 | .815 | .919 | .000 | .000 | .500 | .500 | .750 | .878 | .750 | .870 |
| Cars | 324 | 10 | 46 | 380 | 7 | 292 | 325 | 624 | 0 | 0 | 2 | 2 | 29 | 253 | 6 | 288 |
| % Cars | 100 | 100 | 100 | 100 | 100 | 100 | 99.7 | 99.8 | 0 | 0 | 100 | 100 | 96.7 | 100 | 100 | 99.7 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.3 | 0 | 0 | 0.3 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

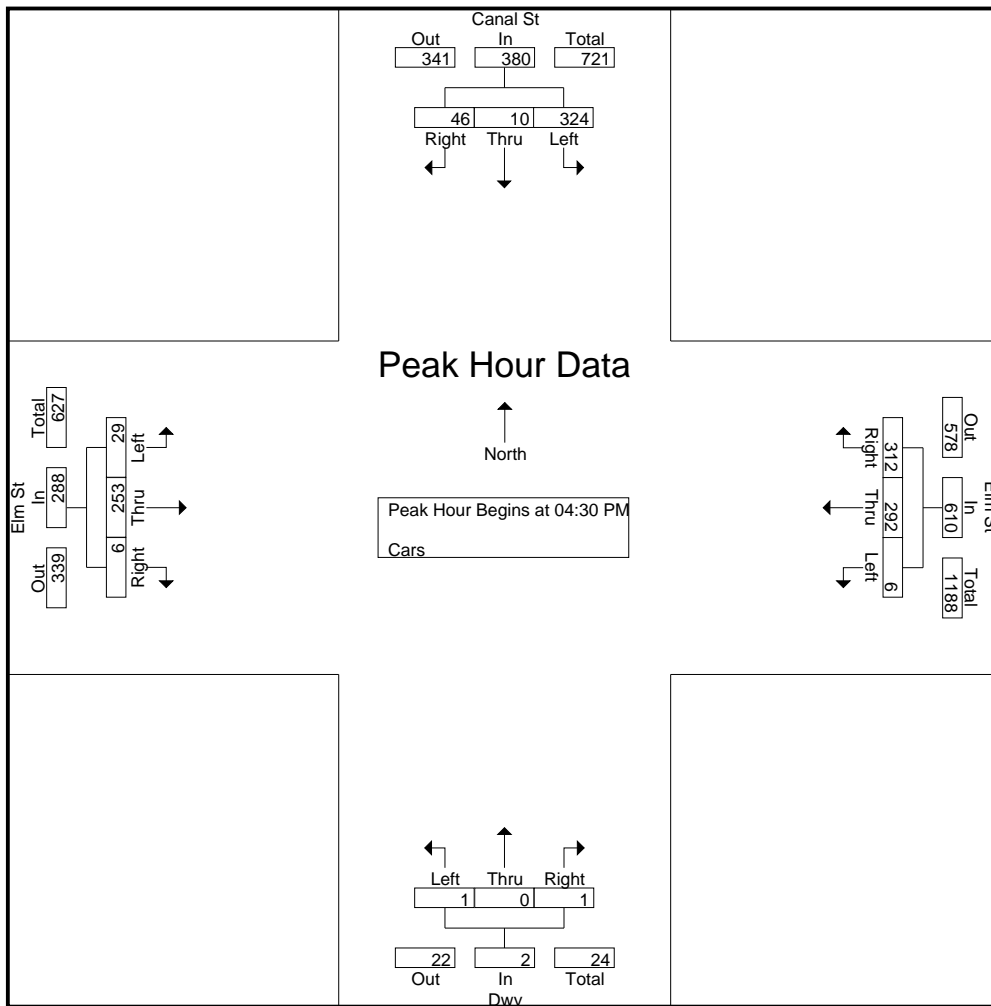
File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

Groups Printed- Cars

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|------------------------|-----------|-----------|---------------------|------------|------------|-------------------|----------|----------|---------------------|------------|-----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 83 | 6 | 12 | 2 | 68 | 65 | 0 | 0 | 1 | 10 | 46 | 3 | 296 |
| 04:15 PM | 63 | 3 | 10 | 1 | 51 | 79 | 0 | 0 | 0 | 4 | 48 | 1 | 260 |
| 04:30 PM | 81 | 4 | 10 | 1 | 77 | 65 | 0 | 0 | 0 | 10 | 72 | 1 | 321 |
| 04:45 PM | 78 | 2 | 20 | 1 | 87 | 71 | 0 | 0 | 1 | 7 | 56 | 1 | 324 |
| Total | 305 | 15 | 52 | 5 | 283 | 280 | 0 | 0 | 2 | 31 | 222 | 6 | 1201 |
| 05:00 PM | 90 | 3 | 11 | 2 | 68 | 100 | 1 | 0 | 0 | 6 | 58 | 2 | 341 |
| 05:15 PM | 75 | 1 | 5 | 2 | 60 | 76 | 0 | 0 | 0 | 6 | 67 | 2 | 294 |
| 05:30 PM | 62 | 2 | 9 | 2 | 77 | 78 | 0 | 0 | 0 | 8 | 60 | 0 | 298 |
| 05:45 PM | 70 | 3 | 9 | 0 | 42 | 69 | 0 | 0 | 0 | 5 | 47 | 1 | 246 |
| Total | 297 | 9 | 34 | 6 | 247 | 323 | 1 | 0 | 0 | 25 | 232 | 5 | 1179 |
| Grand Total | 602 | 24 | 86 | 11 | 530 | 603 | 1 | 0 | 2 | 56 | 454 | 11 | 2380 |
| Apprch % | 84.6 | 3.4 | 12.1 | 1 | 46.3 | 52.7 | 33.3 | 0 | 66.7 | 10.7 | 87.1 | 2.1 | |
| Total % | 25.3 | 1 | 3.6 | 0.5 | 22.3 | 25.3 | 0 | 0 | 0.1 | 2.4 | 19.1 | 0.5 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|-----------|-----------|------------|---------------------|------------|------------|------------|-------------------|----------|----------|------------|---------------------|------------|----------|------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 81 | 4 | 10 | 95 | 1 | 77 | 65 | 143 | 0 | 0 | 0 | 0 | 10 | 72 | 1 | 83 | 321 |
| 04:45 PM | 78 | 2 | 20 | 100 | 1 | 87 | 71 | 159 | 0 | 0 | 1 | 1 | 7 | 56 | 1 | 64 | 324 |
| 05:00 PM | 90 | 3 | 11 | 104 | 2 | 68 | 100 | 170 | 1 | 0 | 0 | 1 | 6 | 58 | 2 | 66 | 341 |
| 05:15 PM | 75 | 1 | 5 | 81 | 2 | 60 | 76 | 138 | 0 | 0 | 0 | 0 | 6 | 67 | 2 | 75 | 294 |
| Total Volume | 324 | 10 | 46 | 380 | 6 | 292 | 312 | 610 | 1 | 0 | 1 | 2 | 29 | 253 | 6 | 288 | 1280 |
| % App. Total | 85.3 | 2.6 | 12.1 | | 1 | 47.9 | 51.1 | | 50 | 0 | 50 | | 10.1 | 87.8 | 2.1 | | |
| PHF | .900 | .625 | .575 | .913 | .750 | .839 | .780 | .897 | .250 | .000 | .250 | .500 | .725 | .878 | .750 | .867 | .938 |

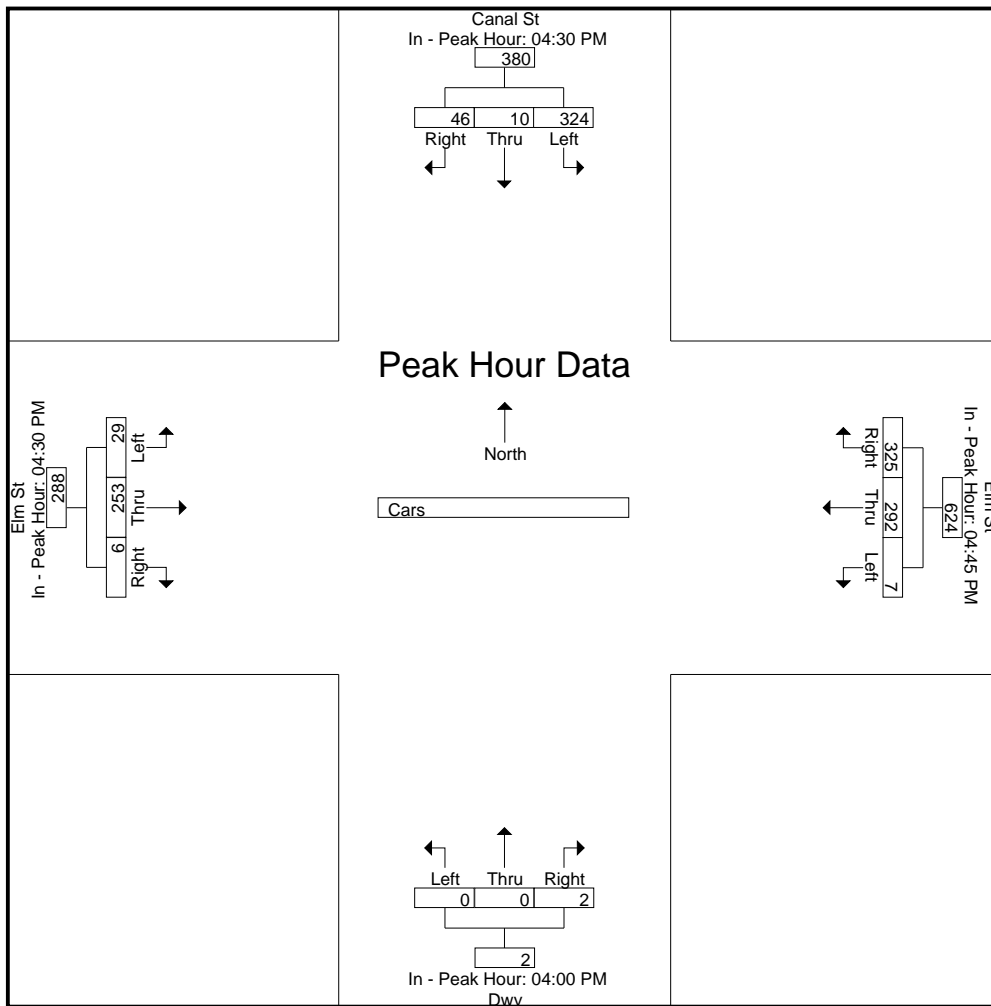
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:45 PM | | | | 04:00 PM | | | | 04:30 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 81 | 4 | 10 | 95 | 1 | 87 | 71 | 159 | 0 | 0 | 1 | 1 | 10 | 72 | 1 | 83 |
| +15 mins. | 78 | 2 | 20 | 100 | 2 | 68 | 100 | 170 | 0 | 0 | 0 | 0 | 7 | 56 | 1 | 64 |
| +30 mins. | 90 | 3 | 11 | 104 | 2 | 60 | 76 | 138 | 0 | 0 | 0 | 0 | 6 | 58 | 2 | 66 |
| +45 mins. | 75 | 1 | 5 | 81 | 2 | 77 | 78 | 157 | 0 | 0 | 1 | 1 | 6 | 67 | 2 | 75 |
| Total Volume | 324 | 10 | 46 | 380 | 7 | 292 | 325 | 624 | 0 | 0 | 2 | 2 | 29 | 253 | 6 | 288 |
| % App. Total | 85.3 | 2.6 | 12.1 | | 1.1 | 46.8 | 52.1 | | 0 | 0 | 100 | | 10.1 | 87.8 | 2.1 | |
| PHF | .900 | .625 | .575 | .913 | .875 | .839 | .813 | .918 | .000 | .000 | .500 | .500 | .725 | .878 | .750 | .867 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

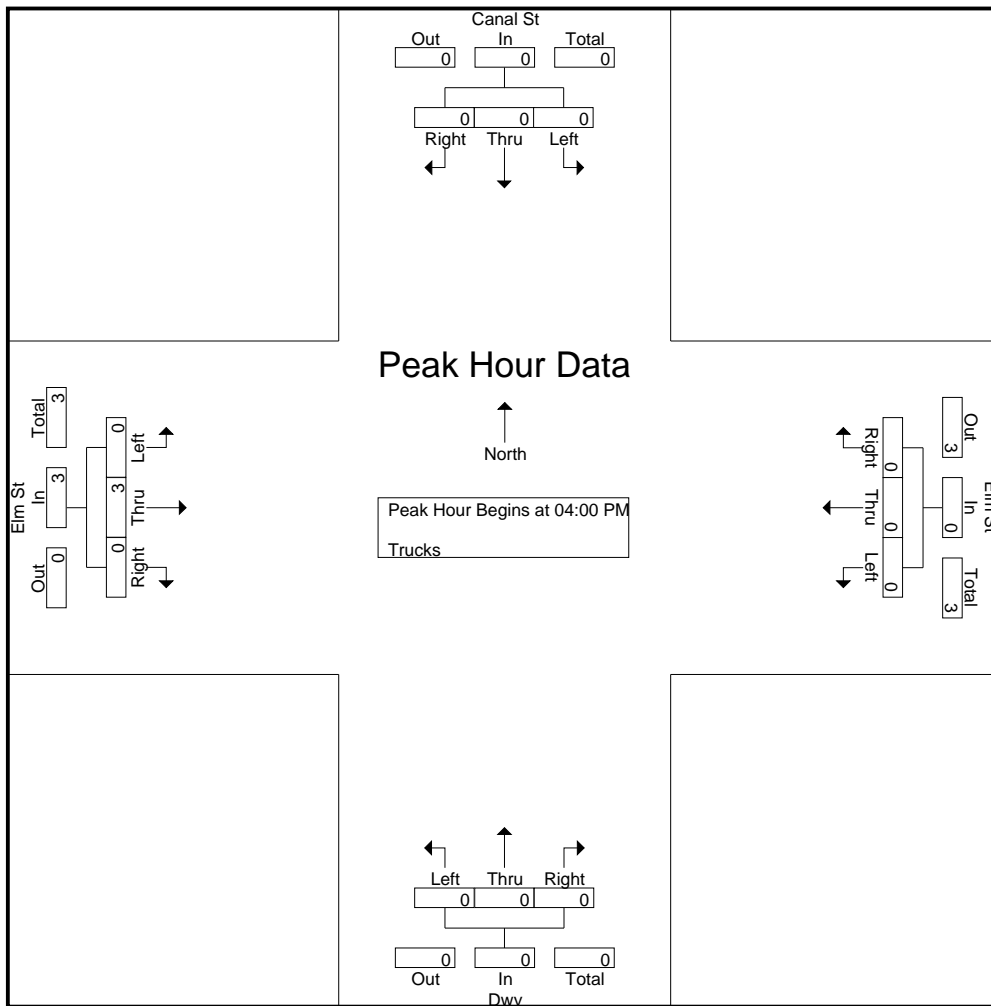
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Trucks

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|------------------------|------|-------|---------------------|------|-------|-------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 5 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 80 | 0 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|------|-------|------------|---------------------|------|-------|------------|-------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .375 | .000 | .375 | |

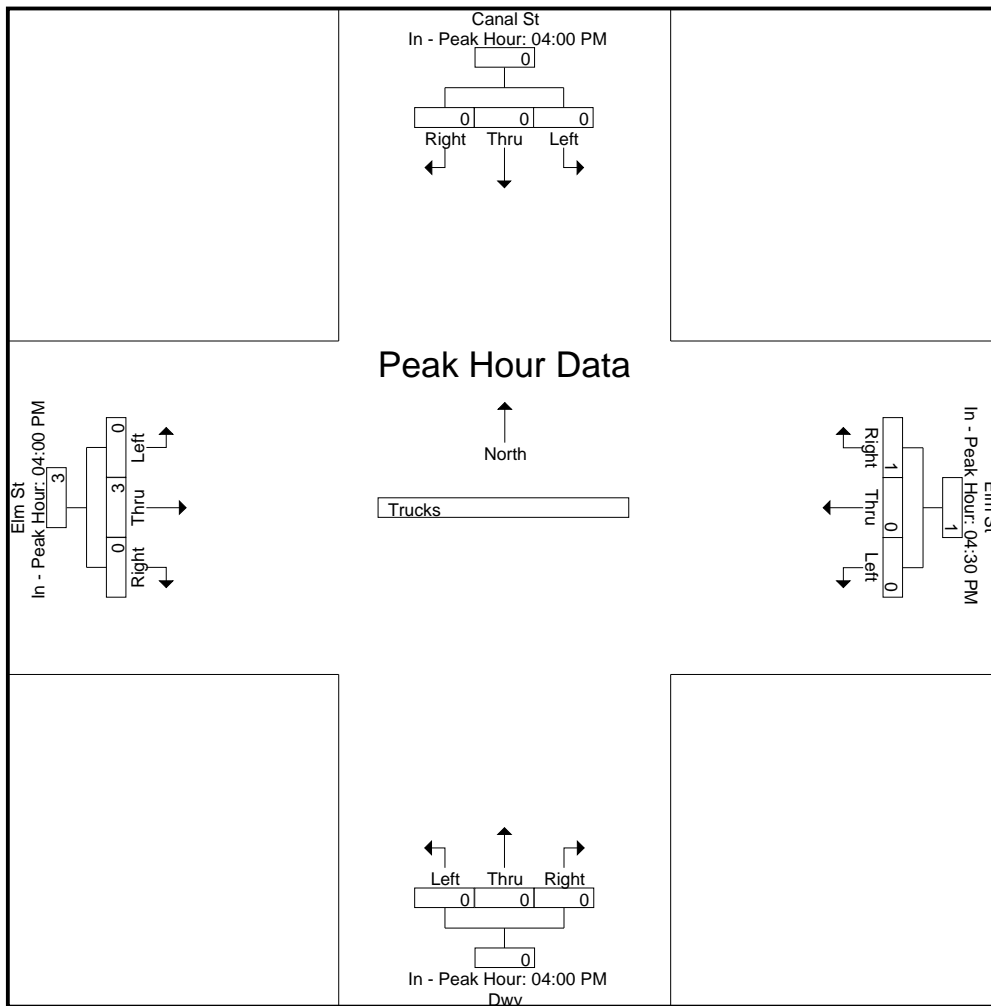
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:30 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|----------|------|----------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 0 | 0 | 100 | 0 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .375 | .000 | .375 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

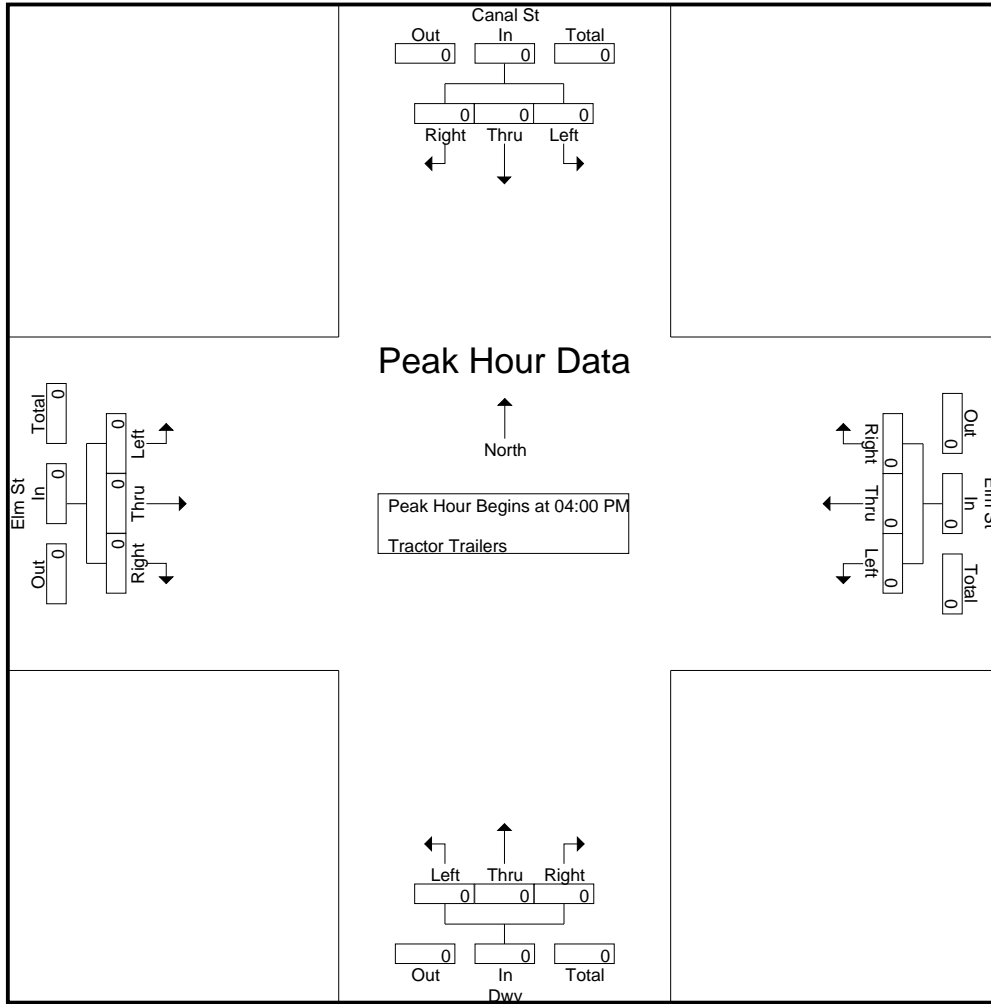
File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

Groups Printed- Tractor Trailers

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|-------------|------------------------|------|-------|---------------------|------|-------|-------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total % | | | | | | | | | | | | | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|------|-------|------------|---------------------|------|-------|------------|-------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

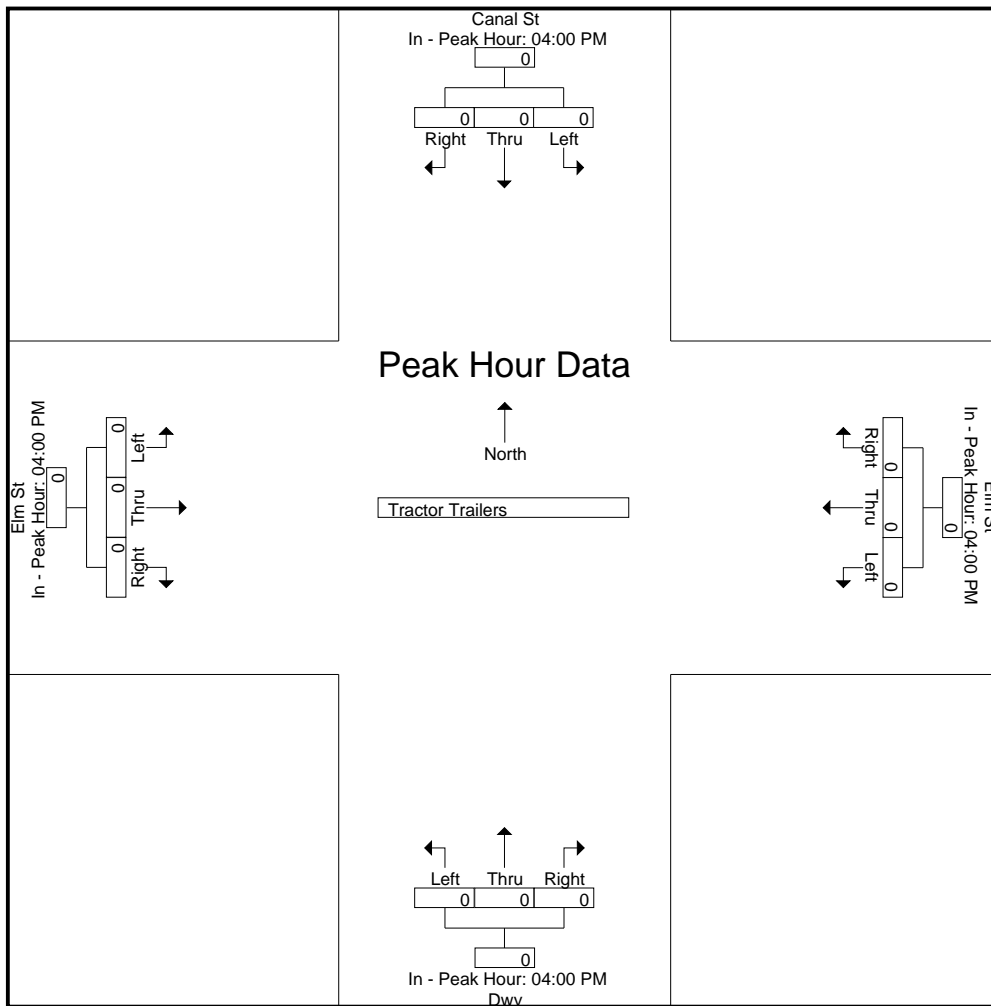
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

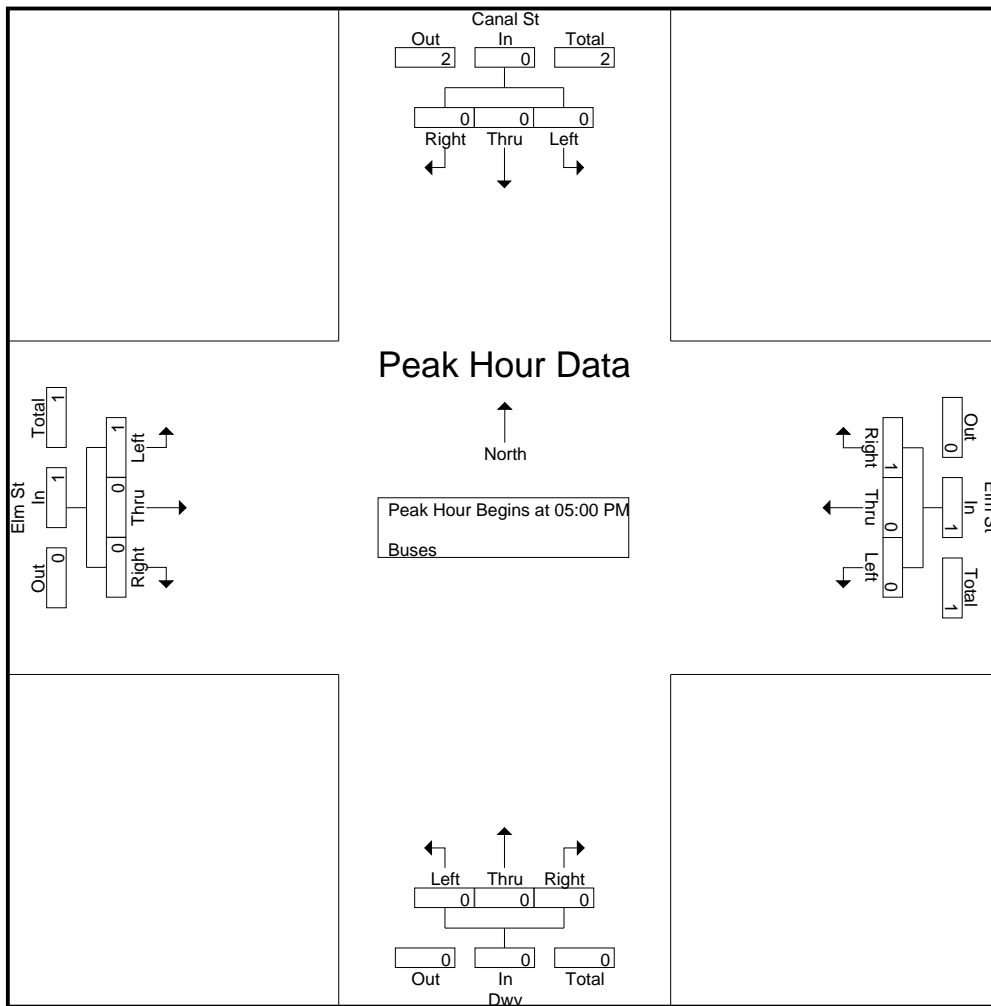
File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

Groups Printed- Buses

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|-------------|------------------------|------|-------|---------------------|------|-------|-------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 50 | 0 | 0 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|------|-------|------------|---------------------|------|-------|------------|-------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | | 100 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .500 |

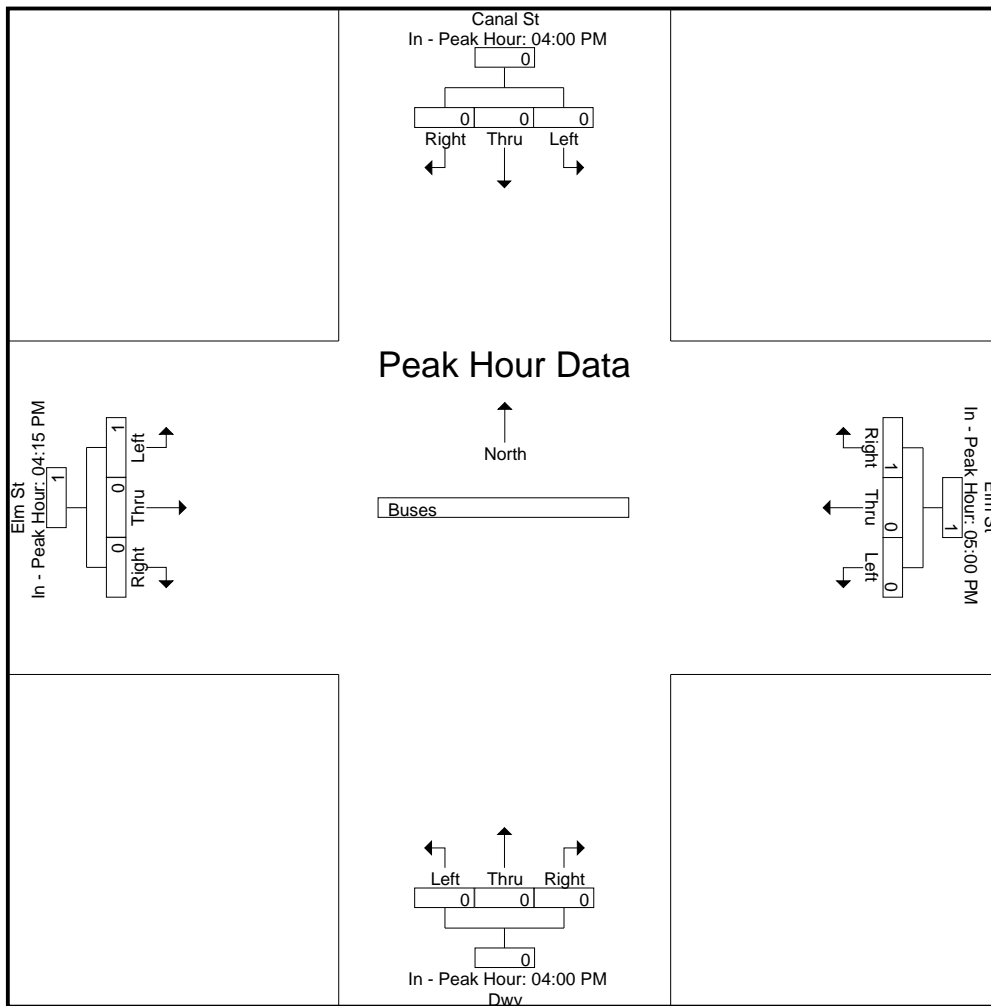
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



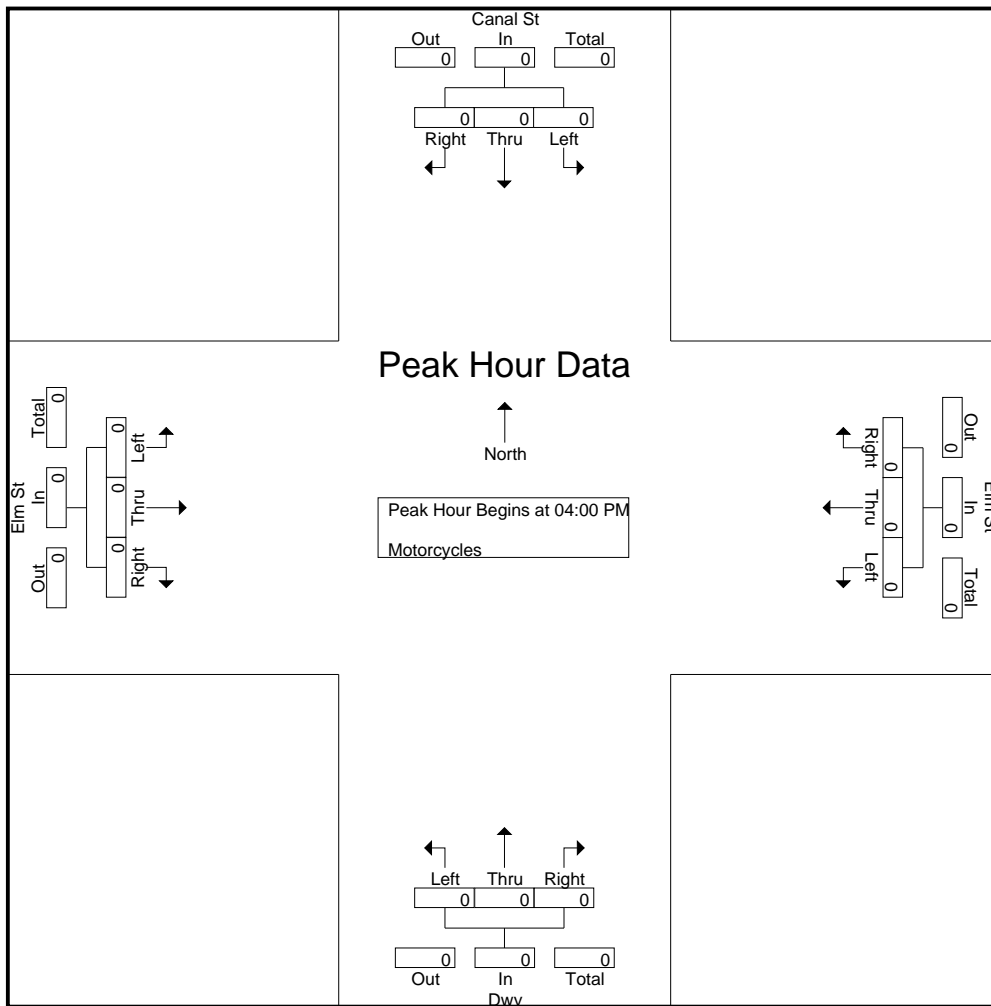
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 05:00 PM | | | | 04:00 PM | | | | 04:15 PM | | | | | | | |
|---------------------|----------|------|-------|-------|----------|------|-------|-------|----------|------|-------|-------|----------|------|-------|-------|------|------|------|-------|
| | Out | In | Total | PHF | Out | In | Total | PHF | Out | In | Total | PHF | Out | In | Total | PHF | | | | |
| +0 mins. | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 |
| +15 mins. | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 |
| +30 mins. | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 | 0 | 0 | 0 | 0.000 |
| +45 mins. | 0 | 0 | 0 | 0.000 | 0 | 0 | 1 | 0.250 | 0 | 0 | 1 | 0.250 | 0 | 0 | 0 | 0.000 | 1 | 0 | 1 | 0.250 |
| Total Volume | 0 | 0 | 0 | | 0 | 0 | 1 | | 0 | 0 | 0 | | 1 | 0 | 1 | | 1 | 0 | 1 | |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 100 | 0 | 100 | | 100 | 0 | 100 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .000 | .250 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



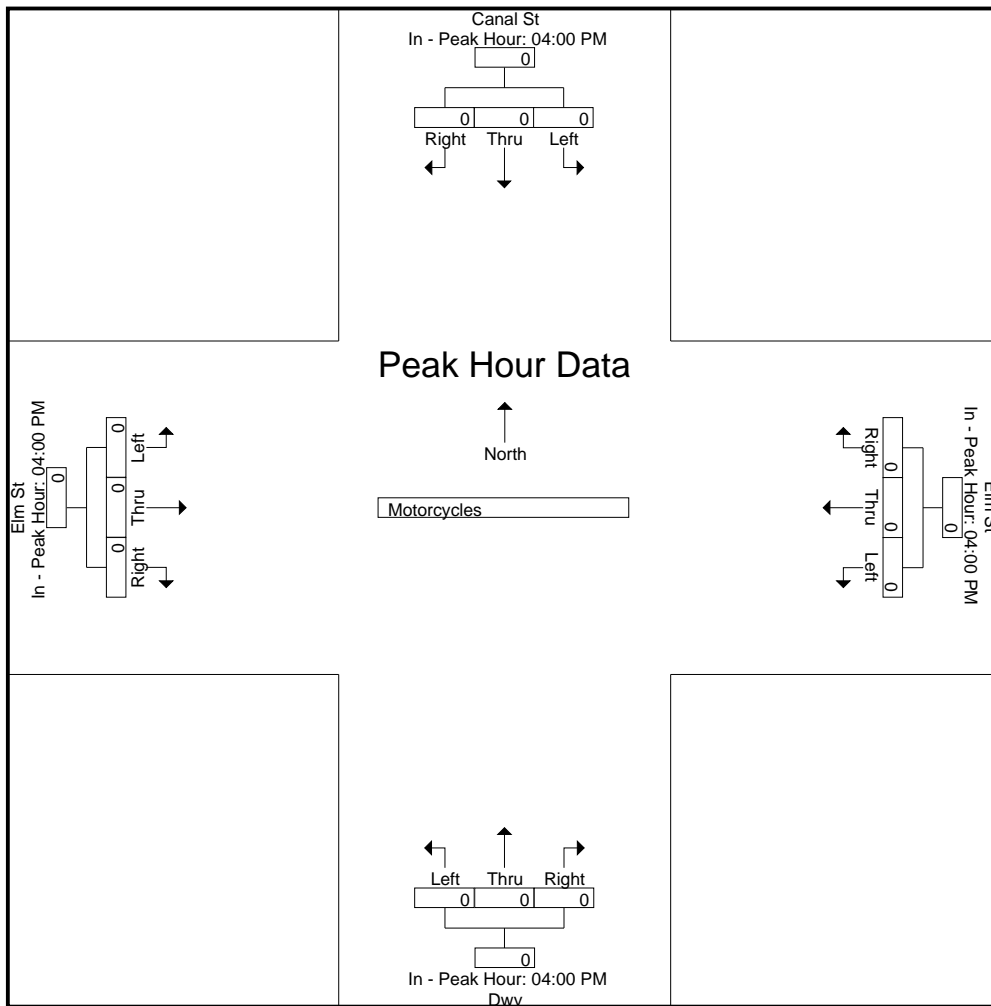
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 1

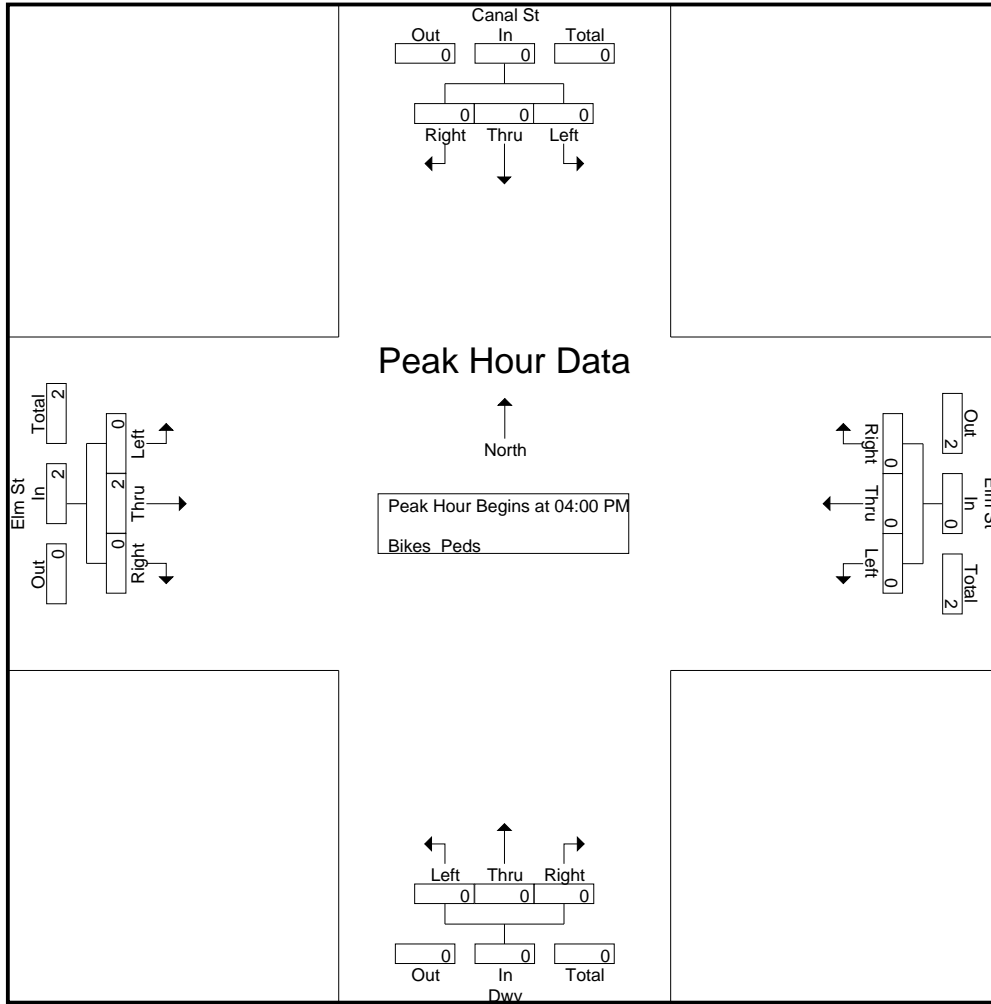
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Bikes Peds

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|---------------------|----------|----------|----------|------------------|----------|----------|----------|----------------|----------|----------|----------|------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 2 | 4 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 6 | 2 | 8 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 7 | 3 | 10 |
| Apprch % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 33.3 | 0 | | 0 | 0 | 0 | | 0 | 66.7 | 0 | | 70 | 30 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|---------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .250 |

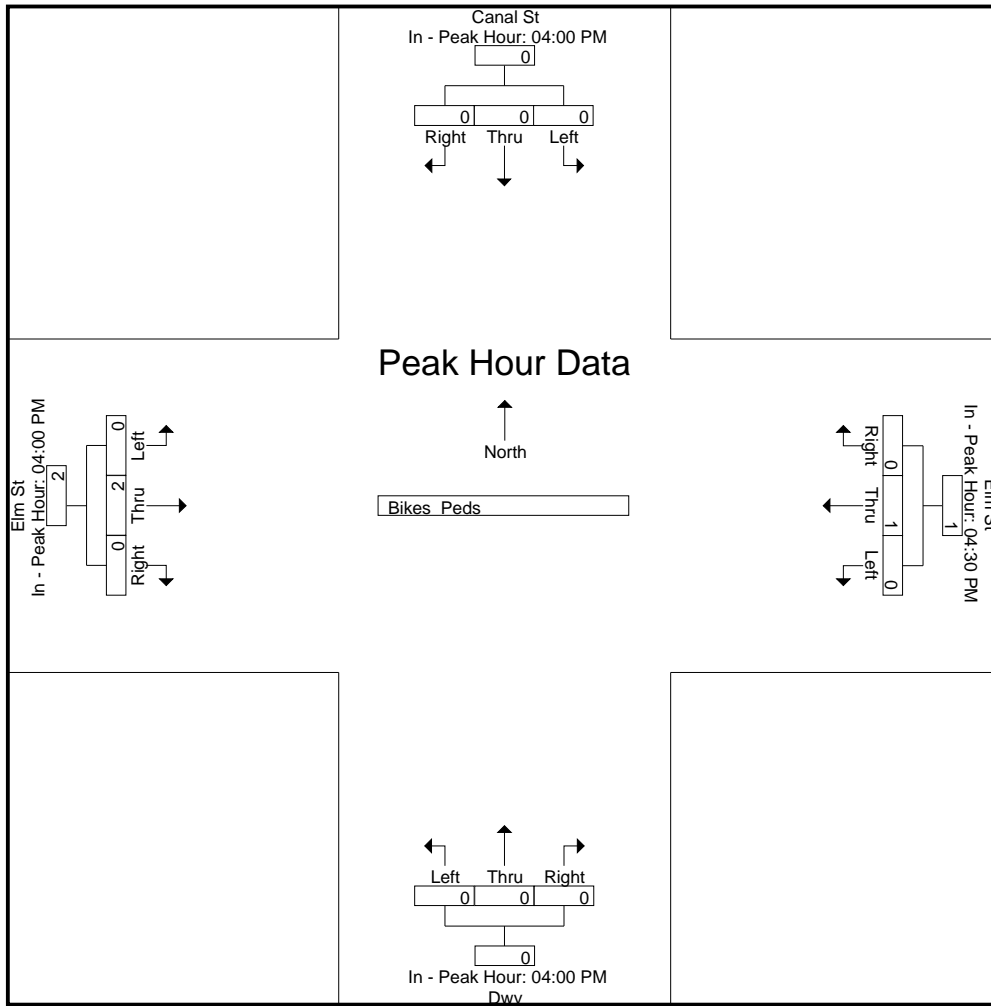
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



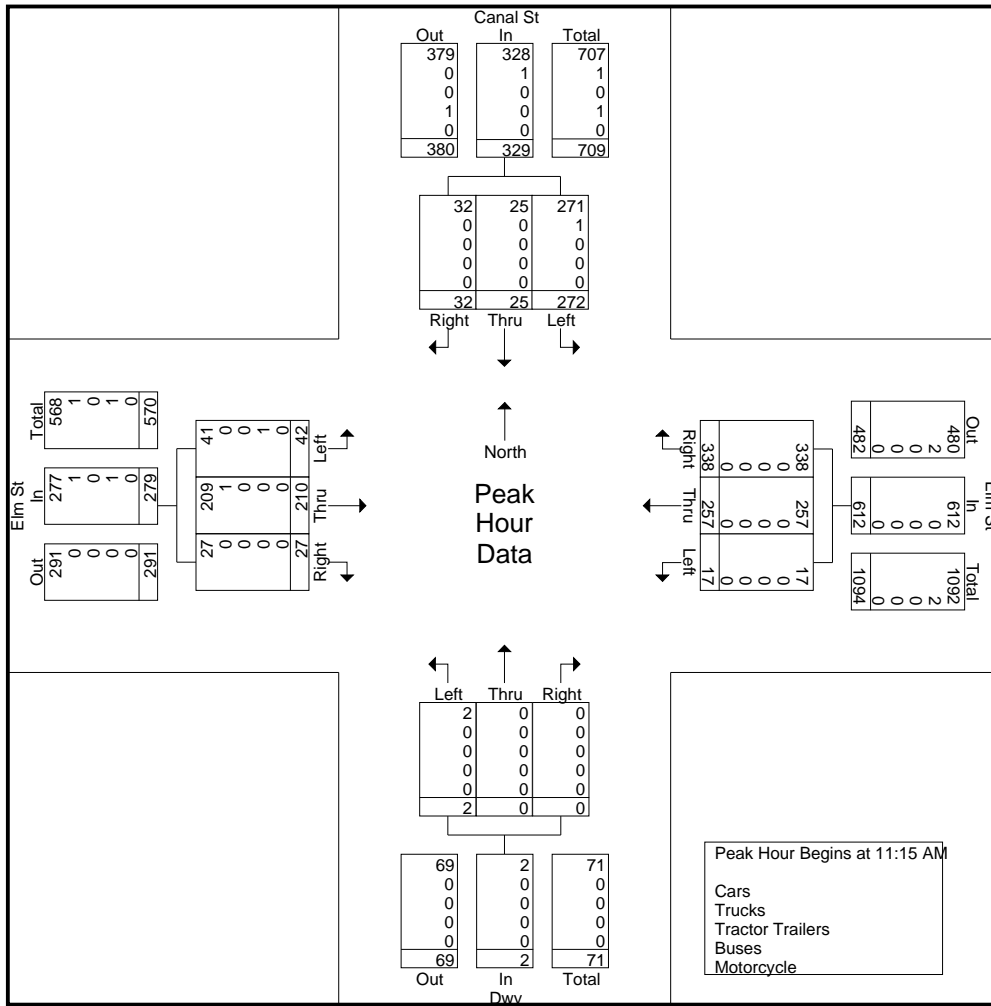
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:30 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



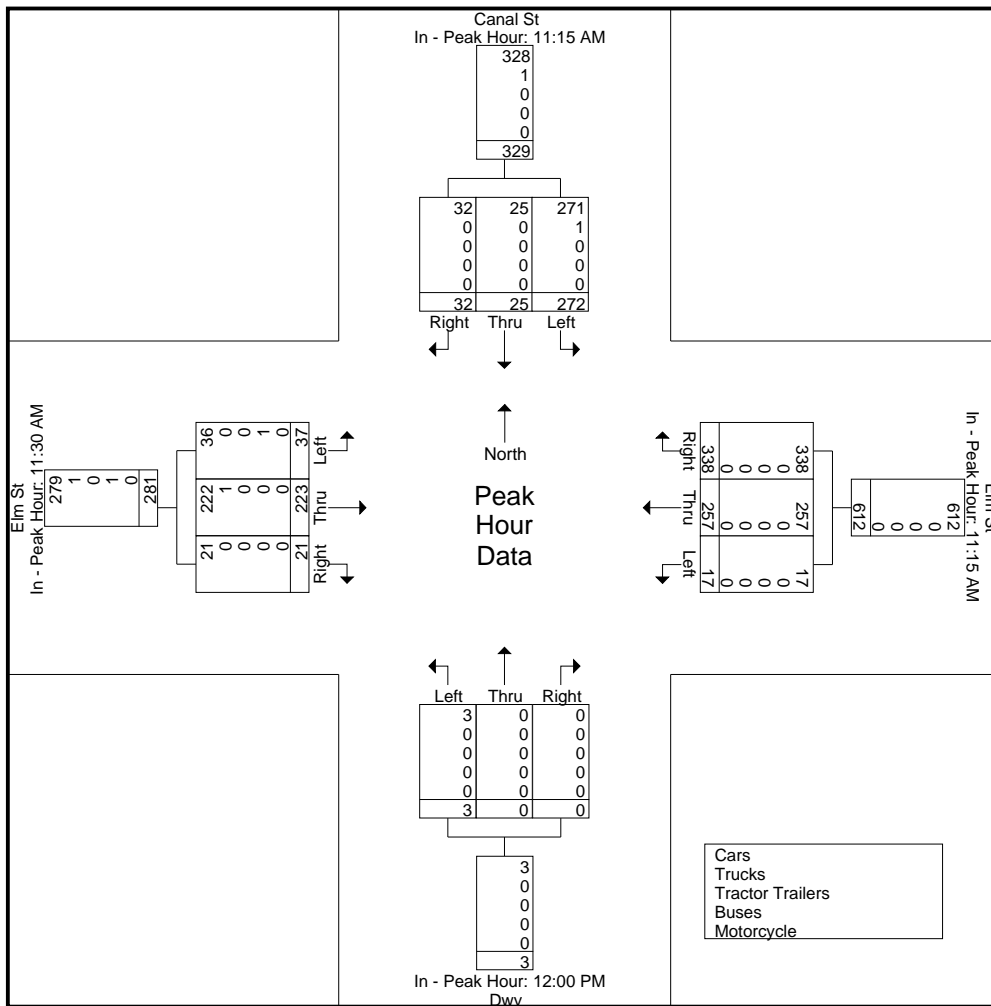
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | | 11:15 AM | | | | 12:00 PM | | | | 11:30 AM | | | |
|--------------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 66 | 6 | 7 | 79 | 7 | 68 | 74 | 149 | 2 | 0 | 0 | 2 | 8 | 64 | 7 | 79 |
| +15 mins. | 71 | 9 | 9 | 89 | 2 | 56 | 89 | 147 | 0 | 0 | 0 | 0 | 17 | 48 | 7 | 72 |
| +30 mins. | 63 | 6 | 7 | 76 | 2 | 62 | 97 | 161 | 0 | 0 | 0 | 0 | 9 | 45 | 4 | 58 |
| +45 mins. | 72 | 4 | 9 | 85 | 6 | 71 | 78 | 155 | 1 | 0 | 0 | 1 | 3 | 66 | 3 | 72 |
| Total Volume | 272 | 25 | 32 | 329 | 17 | 257 | 338 | 612 | 3 | 0 | 0 | 3 | 37 | 223 | 21 | 281 |
| % App. Total | 82.7 | 7.6 | 9.7 | | 2.8 | 42 | 55.2 | | 100 | 0 | 0 | | 13.2 | 79.4 | 7.5 | |
| PHF | .944 | .694 | .889 | .924 | .607 | .905 | .871 | .950 | .375 | .000 | .000 | .375 | .544 | .845 | .750 | .889 |
| Cars | 271 | 25 | 32 | 328 | 17 | 257 | 338 | 612 | 3 | 0 | 0 | 3 | 36 | 222 | 21 | 279 |
| % Cars | 99.6 | 100 | 100 | 99.7 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 97.3 | 99.6 | 100 | 99.3 |
| Trucks | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| % Trucks | 0.4 | 0 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0 | 0.4 |
| Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.7 | 0 | 0 | 0.4 |
| Motorcycle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

File Name : 187600S1
Site Code : 18760001
Start Date : 2/27/2021
Page No : 3

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

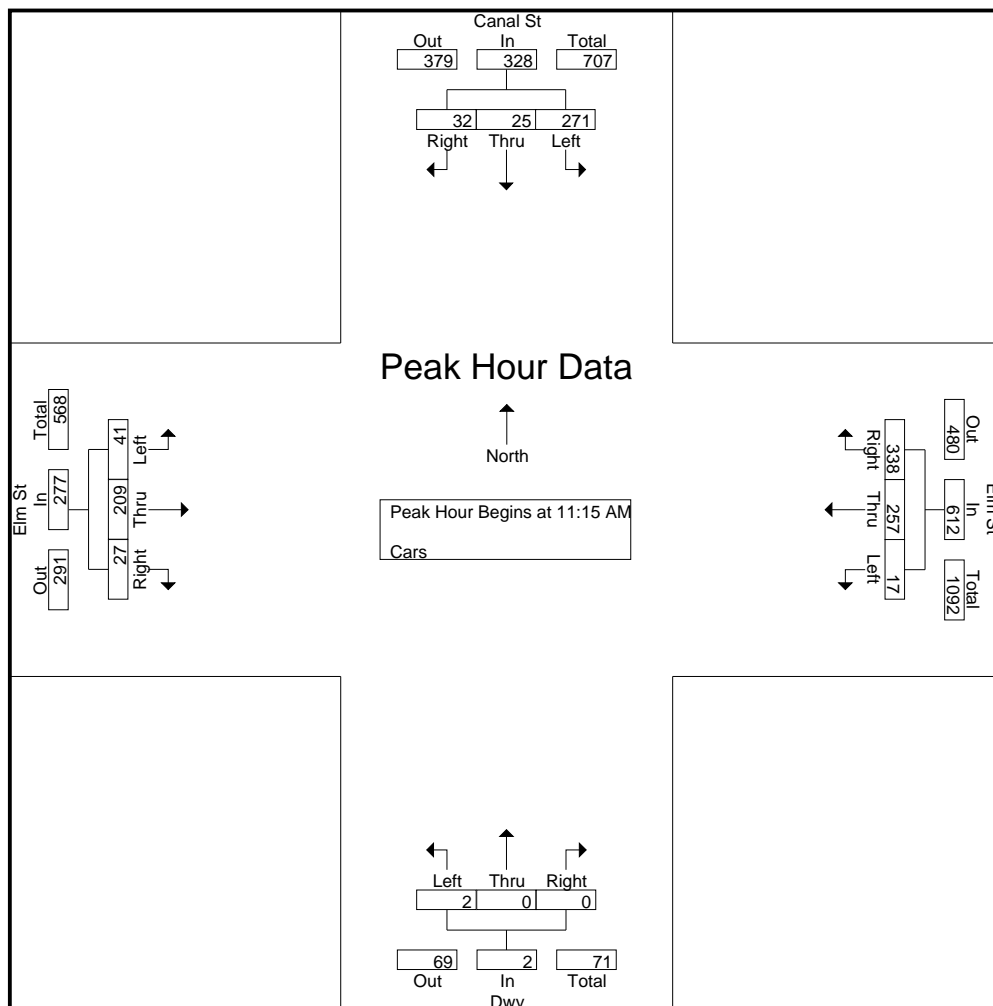
File Name : 187600S1
Site Code : 18760001
Start Date : 2/27/2021
Page No : 1

Groups Printed- Cars

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|------------------------|-----------|-----------|---------------------|------------|------------|-------------------|----------|----------|---------------------|------------|-----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 61 | 11 | 6 | 5 | 47 | 93 | 2 | 0 | 0 | 5 | 47 | 6 | 283 |
| 11:15 AM | 66 | 6 | 7 | 7 | 68 | 74 | 0 | 0 | 0 | 8 | 53 | 9 | 298 |
| 11:30 AM | 71 | 9 | 9 | 2 | 56 | 89 | 0 | 0 | 0 | 8 | 64 | 7 | 315 |
| 11:45 AM | 62 | 6 | 7 | 2 | 62 | 97 | 0 | 0 | 0 | 17 | 48 | 7 | 308 |
| Total | 260 | 32 | 29 | 16 | 233 | 353 | 2 | 0 | 0 | 38 | 212 | 29 | 1204 |
| 12:00 PM | 72 | 4 | 9 | 6 | 71 | 78 | 2 | 0 | 0 | 8 | 44 | 4 | 298 |
| 12:15 PM | 51 | 5 | 11 | 4 | 49 | 90 | 0 | 0 | 0 | 3 | 66 | 3 | 282 |
| 12:30 PM | 71 | 6 | 6 | 4 | 66 | 78 | 0 | 0 | 0 | 7 | 55 | 4 | 297 |
| 12:45 PM | 56 | 3 | 10 | 5 | 76 | 56 | 1 | 0 | 0 | 6 | 47 | 6 | 266 |
| Total | 250 | 18 | 36 | 19 | 262 | 302 | 3 | 0 | 0 | 24 | 212 | 17 | 1143 |
| Grand Total | 510 | 50 | 65 | 35 | 495 | 655 | 5 | 0 | 0 | 62 | 424 | 46 | 2347 |
| Apprch % | 81.6 | 8 | 10.4 | 3 | 41.8 | 55.3 | 100 | 0 | 0 | 11.7 | 79.7 | 8.6 | |
| Total % | 21.7 | 2.1 | 2.8 | 1.5 | 21.1 | 27.9 | 0.2 | 0 | 0 | 2.6 | 18.1 | 2 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|------------|------------|------------|---------------------|------------|-------------|------------|-------------------|----------|----------|------------|---------------------|-------------|------------|------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 66 | 6 | 7 | 79 | 7 | 68 | 74 | 149 | 0 | 0 | 0 | 0 | 8 | 53 | 9 | 70 | 298 |
| 11:30 AM | 71 | 9 | 9 | 89 | 2 | 56 | 89 | 147 | 0 | 0 | 0 | 0 | 8 | 64 | 7 | 79 | 315 |
| 11:45 AM | 62 | 6 | 7 | 75 | 2 | 62 | 97 | 161 | 0 | 0 | 0 | 0 | 17 | 48 | 7 | 72 | 308 |
| 12:00 PM | 72 | 4 | 9 | 85 | 6 | 71 | 78 | 155 | 2 | 0 | 0 | 2 | 8 | 44 | 4 | 56 | 298 |
| Total Volume | 271 | 25 | 32 | 328 | 17 | 257 | 338 | 612 | 2 | 0 | 0 | 2 | 41 | 209 | 27 | 277 | 1219 |
| % App. Total | 82.6 | 7.6 | 9.8 | | 2.8 | 42 | 55.2 | | 100 | 0 | 0 | | 14.8 | 75.5 | 9.7 | | |
| PHF | .941 | .694 | .889 | .921 | .607 | .905 | .871 | .950 | .250 | .000 | .000 | .250 | .603 | .816 | .750 | .877 | .967 |

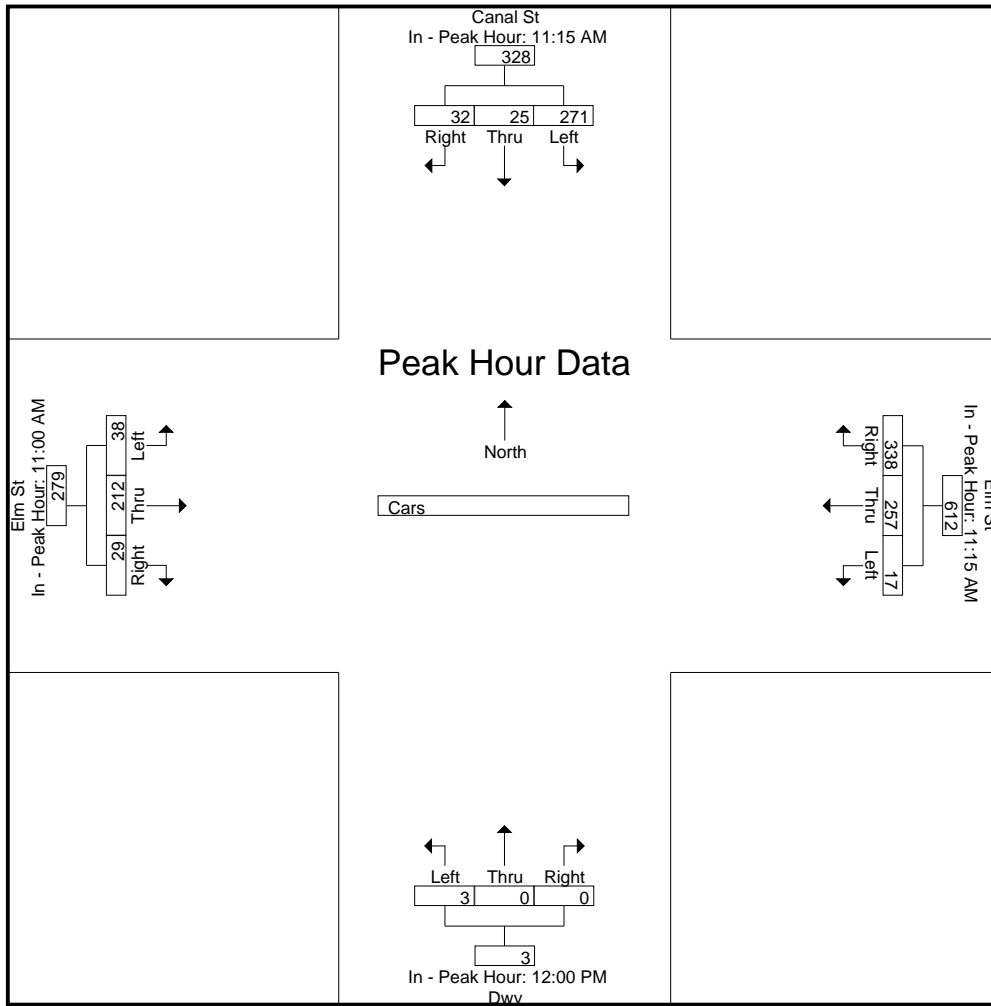
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | | 11:15 AM | | | | 12:00 PM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 66 | 6 | 7 | 79 | 7 | 68 | 74 | 149 | 2 | 0 | 0 | 2 | 5 | 47 | 6 | 58 |
| +15 mins. | 71 | 9 | 9 | 89 | 2 | 56 | 89 | 147 | 0 | 0 | 0 | 0 | 8 | 53 | 9 | 70 |
| +30 mins. | 62 | 6 | 7 | 75 | 2 | 62 | 97 | 161 | 0 | 0 | 0 | 0 | 8 | 64 | 7 | 79 |
| +45 mins. | 72 | 4 | 9 | 85 | 6 | 71 | 78 | 155 | 1 | 0 | 0 | 1 | 17 | 48 | 7 | 72 |
| Total Volume | 271 | 25 | 32 | 328 | 17 | 257 | 338 | 612 | 3 | 0 | 0 | 3 | 38 | 212 | 29 | 279 |
| % App. Total | 82.6 | 7.6 | 9.8 | | 2.8 | 42 | 55.2 | | 100 | 0 | 0 | | 13.6 | 76 | 10.4 | |
| PHF | .941 | .694 | .889 | .921 | .607 | .905 | .871 | .950 | .375 | .000 | .000 | .375 | .559 | .828 | .806 | .883 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

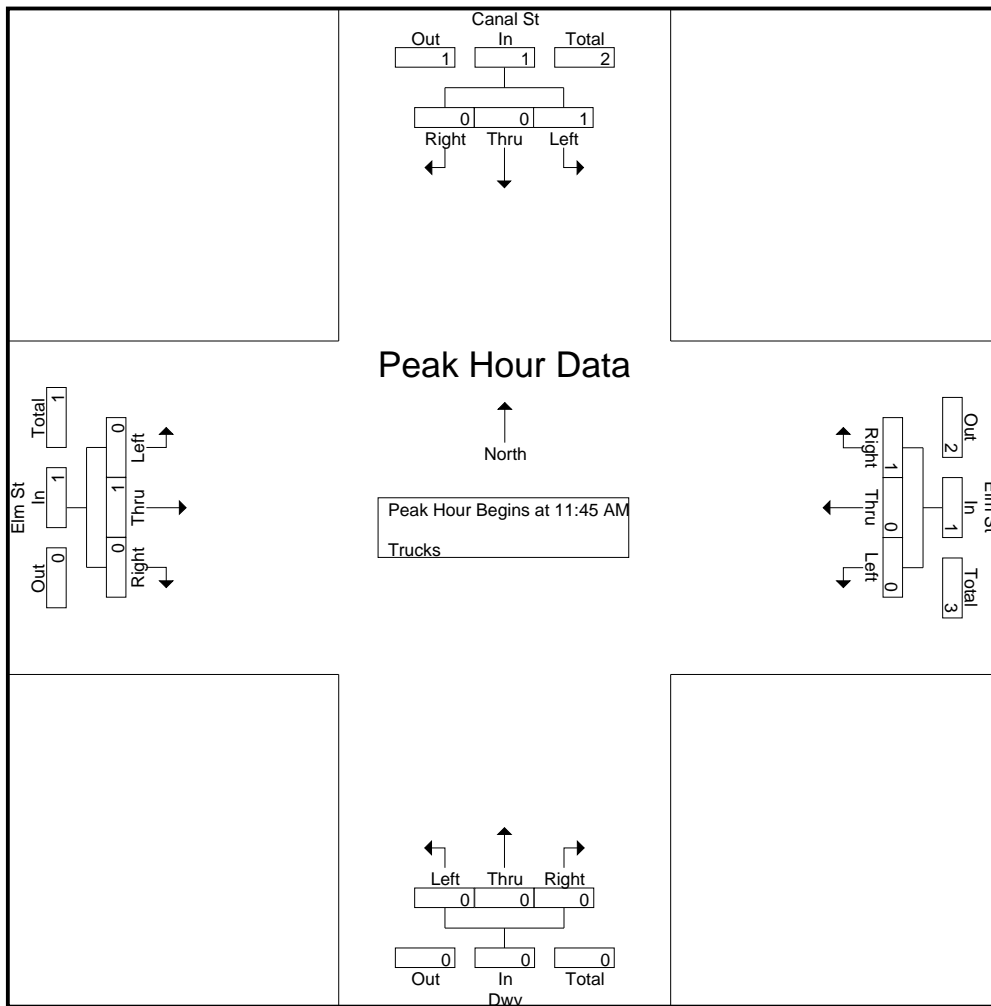
File Name : 187600S1
Site Code : 18760001
Start Date : 2/27/2021
Page No : 1

Groups Printed- Trucks

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|--------------------|---------------------|----------|----------|------------------|----------|----------|----------------|----------|----------|------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Grand Total | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 4 |
| Apprch % | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 100 | 0 | |
| Total % | 25 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 25 | 0 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|---------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | | | | | |
| 11:45 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| % App. Total | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .750 |

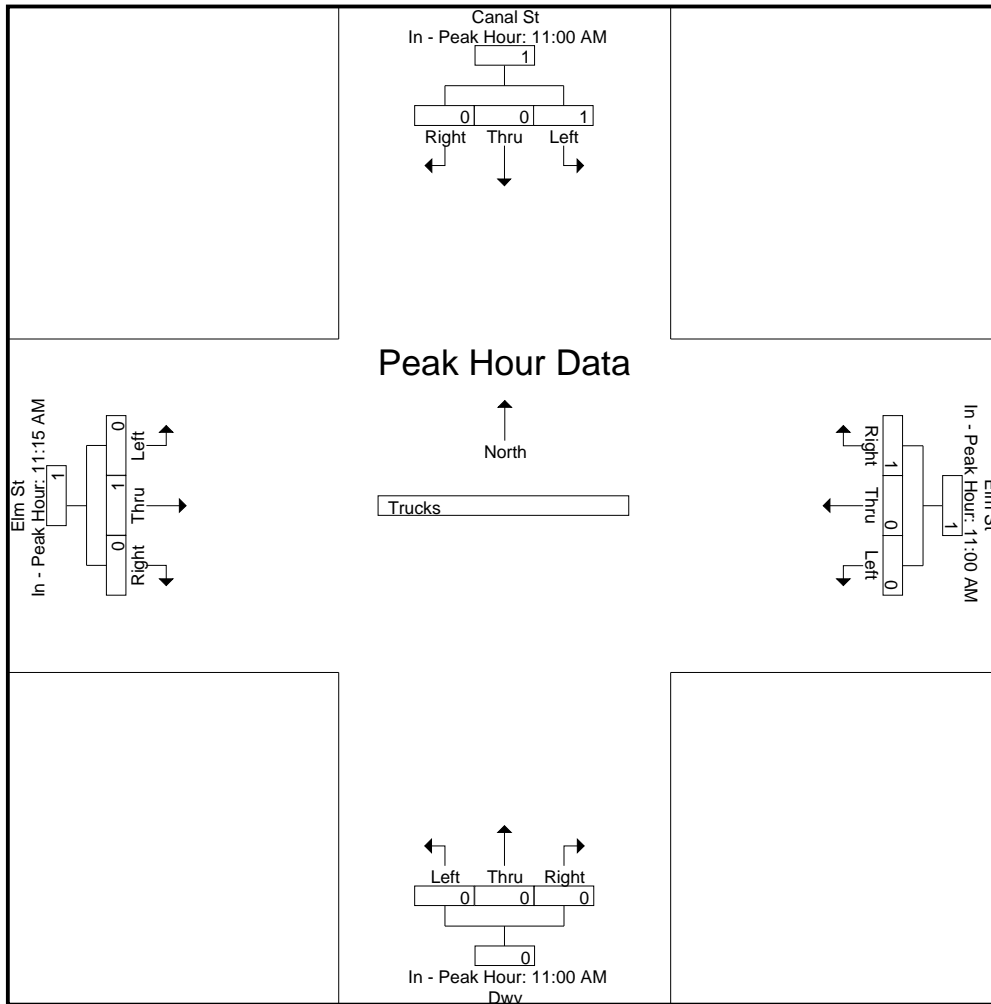
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



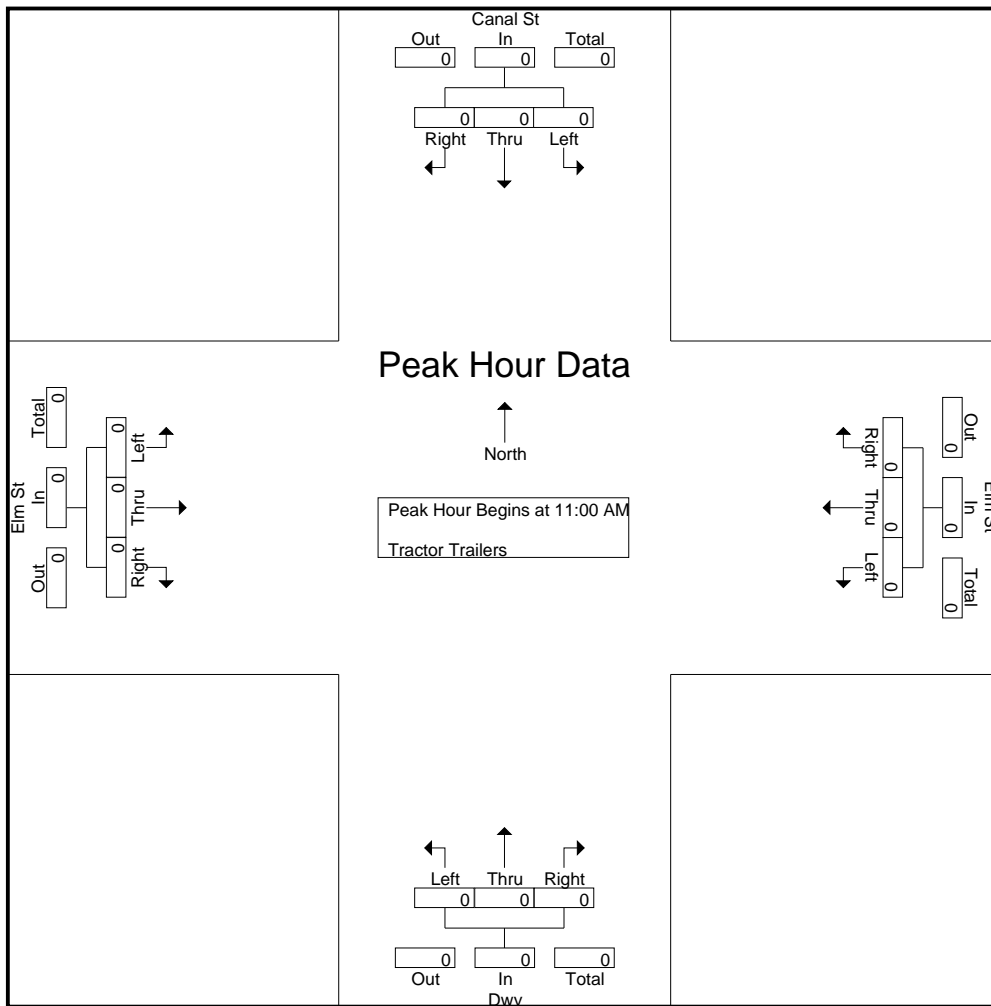
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:15 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 100 | 0 | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



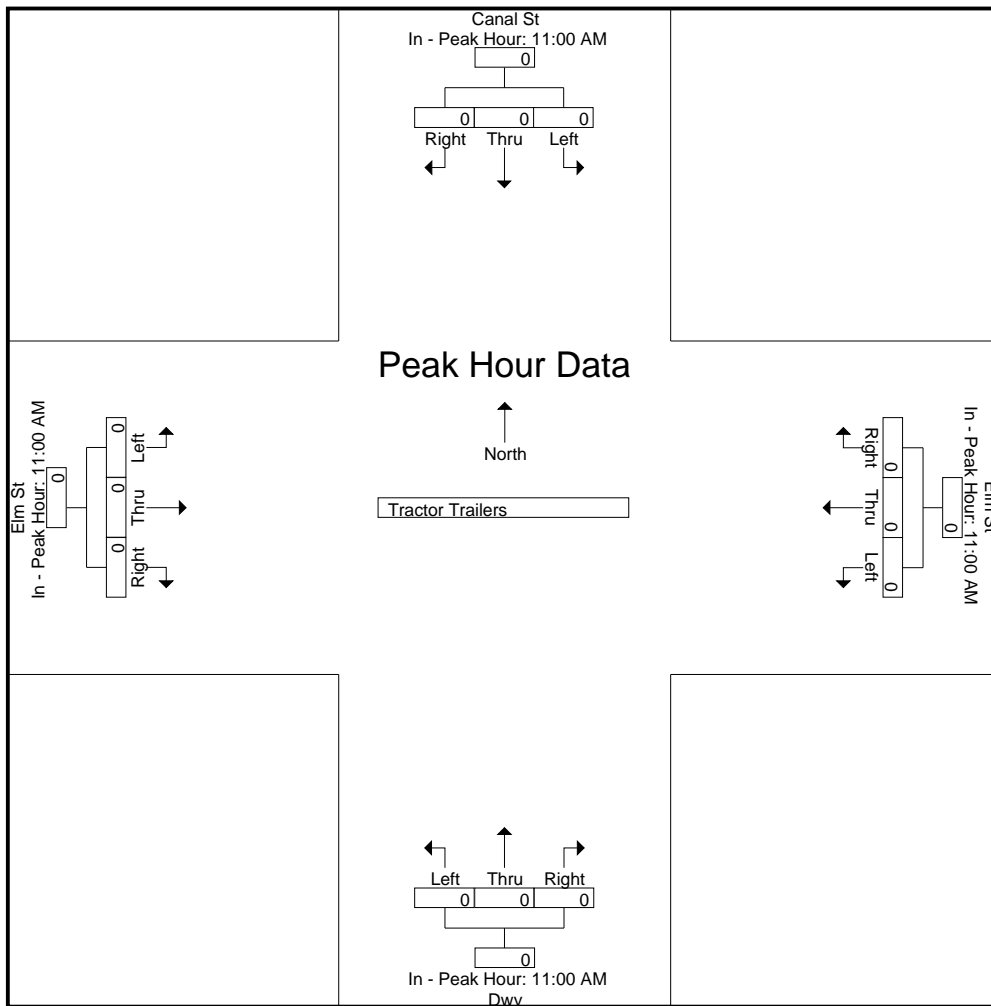
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

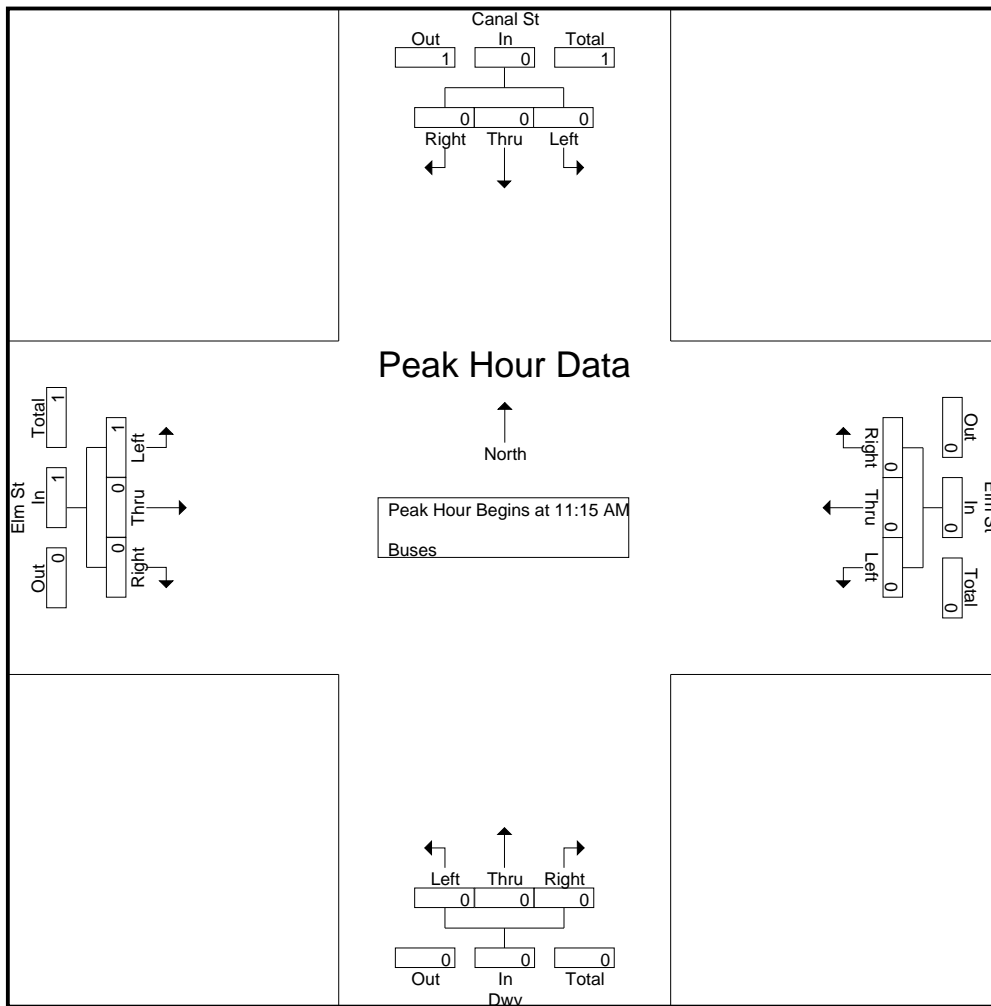
File Name : 187600S1
Site Code : 18760001
Start Date : 2/27/2021
Page No : 1

Groups Printed- Buses

| Start Time | Canal St From North | | | Elm St From East | | | Dwy From South | | | Elm St From West | | | Int. Total |
|-------------|------------------------|------|-------|---------------------|------|-------|-------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|------------------------|------|-------|------------|---------------------|------|-------|------------|-------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .250 |

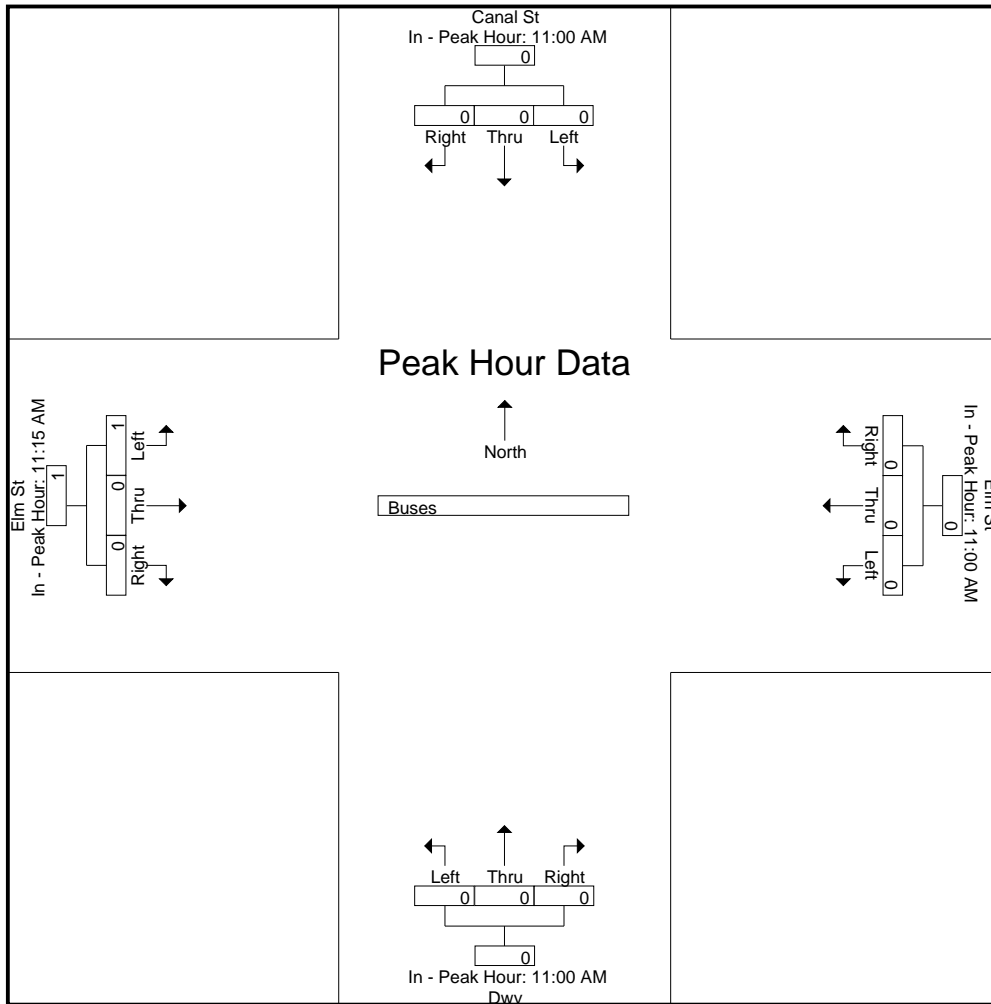
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



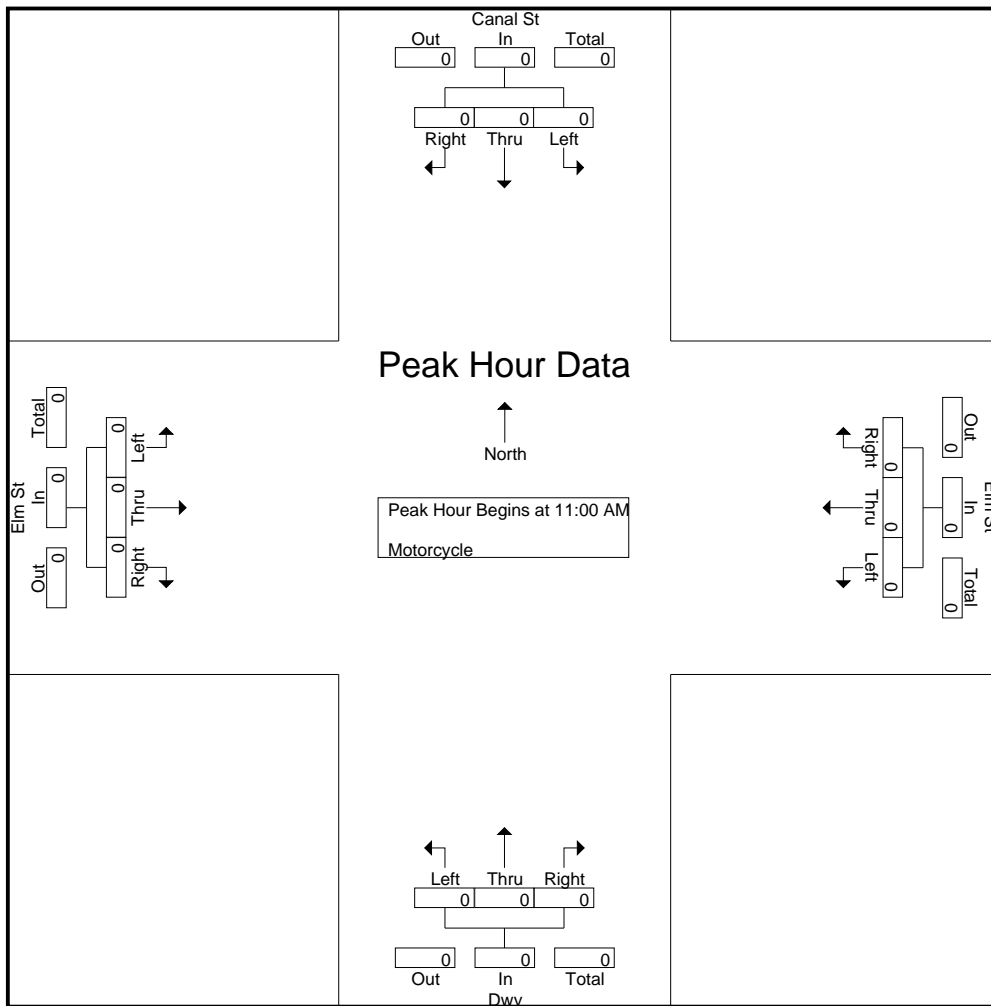
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:15 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



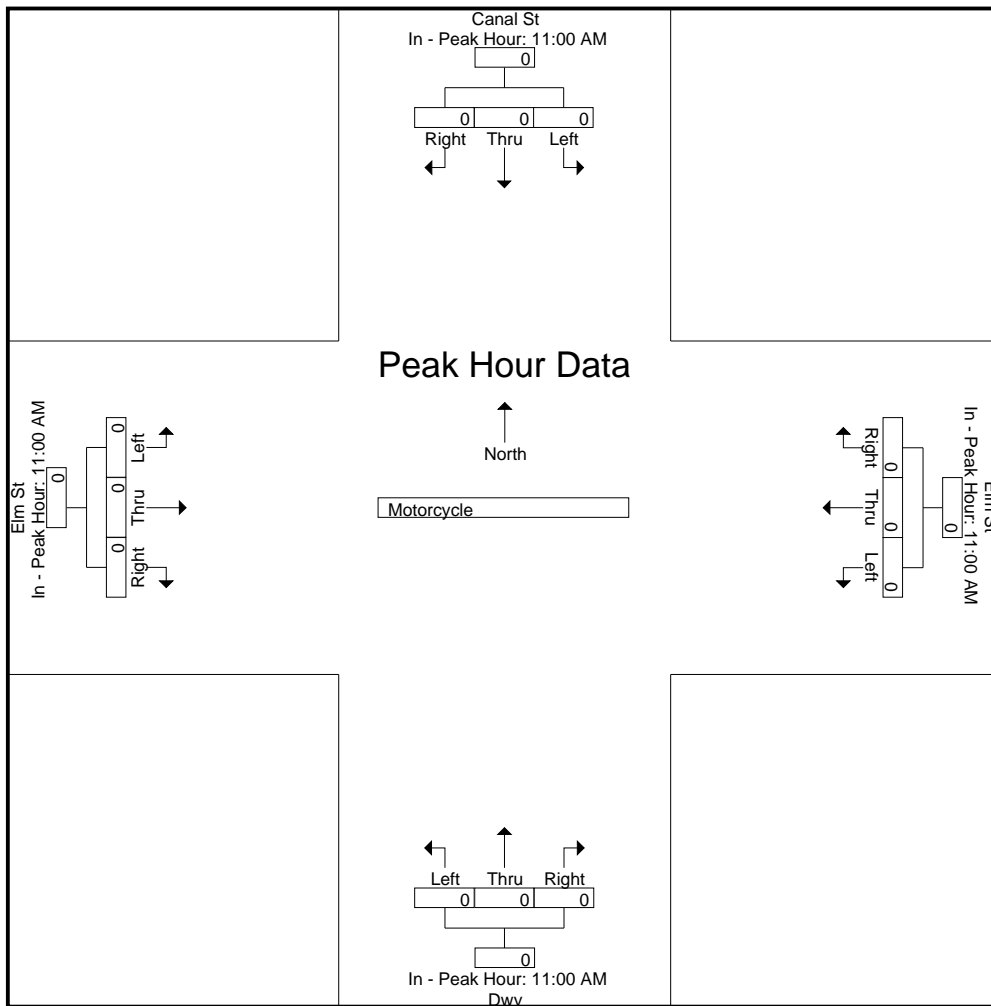
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S1
Site Code : 18760001
Start Date : 2/27/2021
Page No : 1

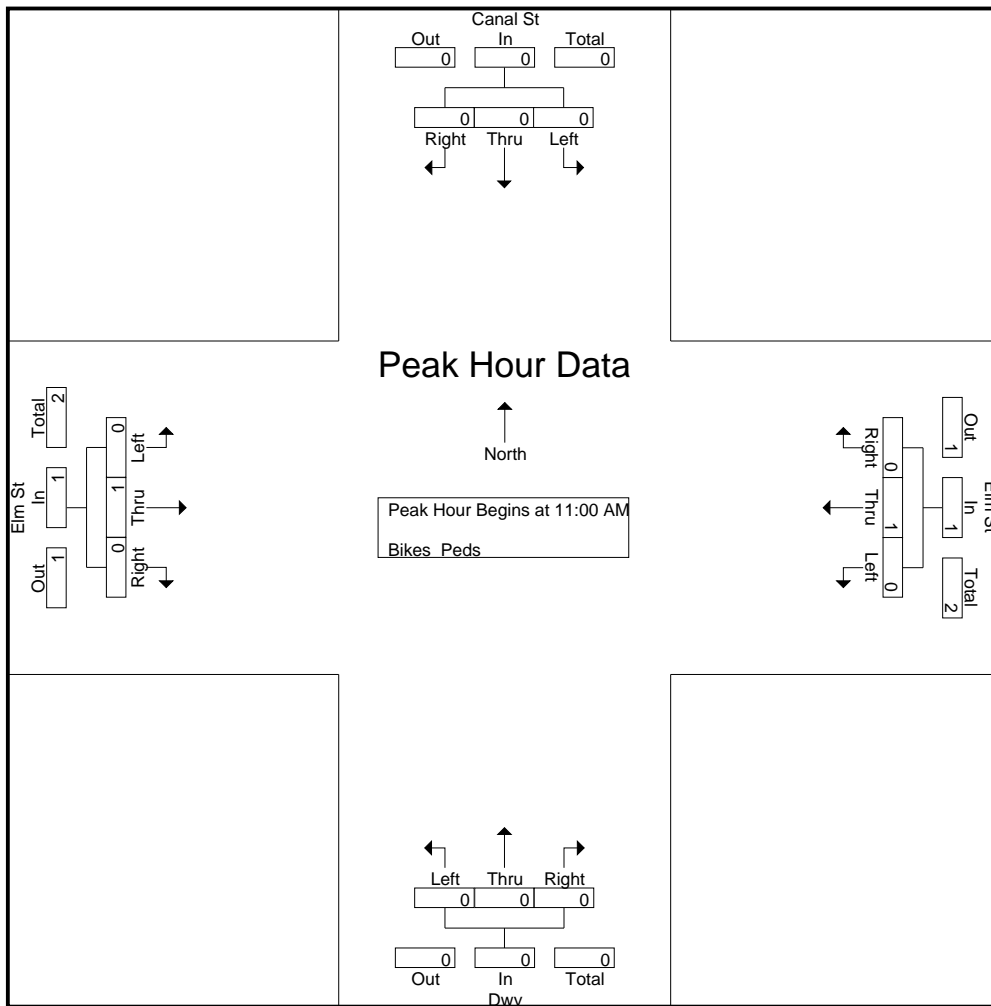
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Bikes Peds

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|---------------------|----------|----------|----------|------------------|----------|----------|----------|----------------|----------|----------|----------|------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 11:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 3 | 2 | 5 |
| Total | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 5 | 2 | 7 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 7 | 2 | 9 |
| Apprch % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 50 | 0 | | 0 | 0 | 0 | | 0 | 50 | 0 | | 77.8 | 22.2 | |

| Start Time | Canal St From North | | | | Elm St From East | | | | Dwy From South | | | | Elm St From West | | | | Int. Total |
|--|---------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .250 |

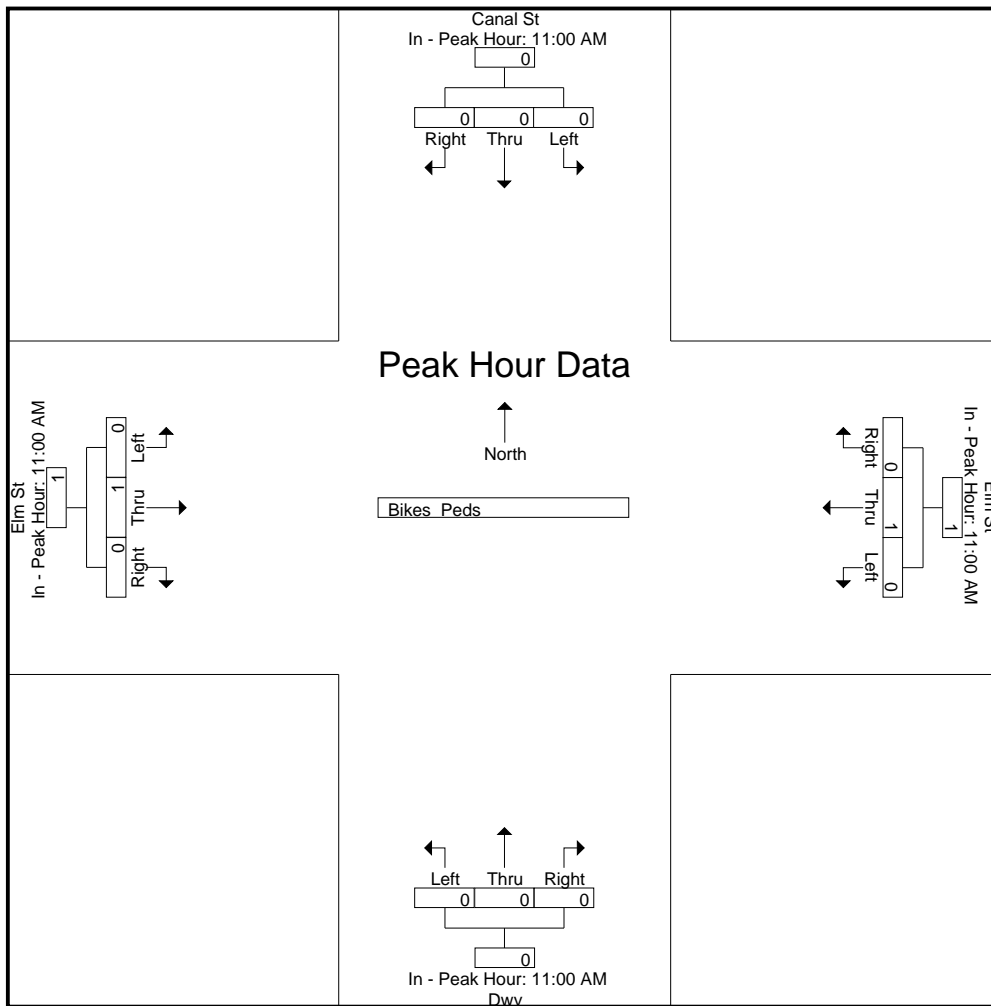
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 |

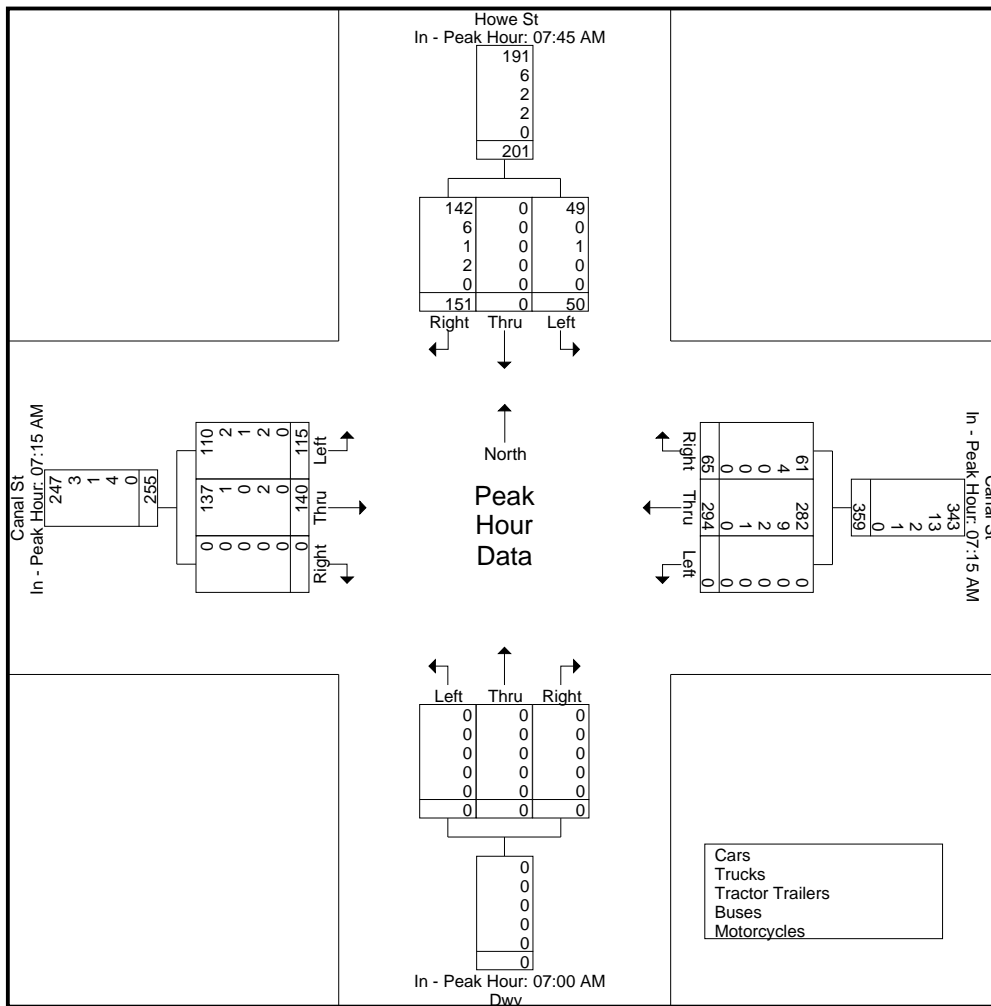
N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 3

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

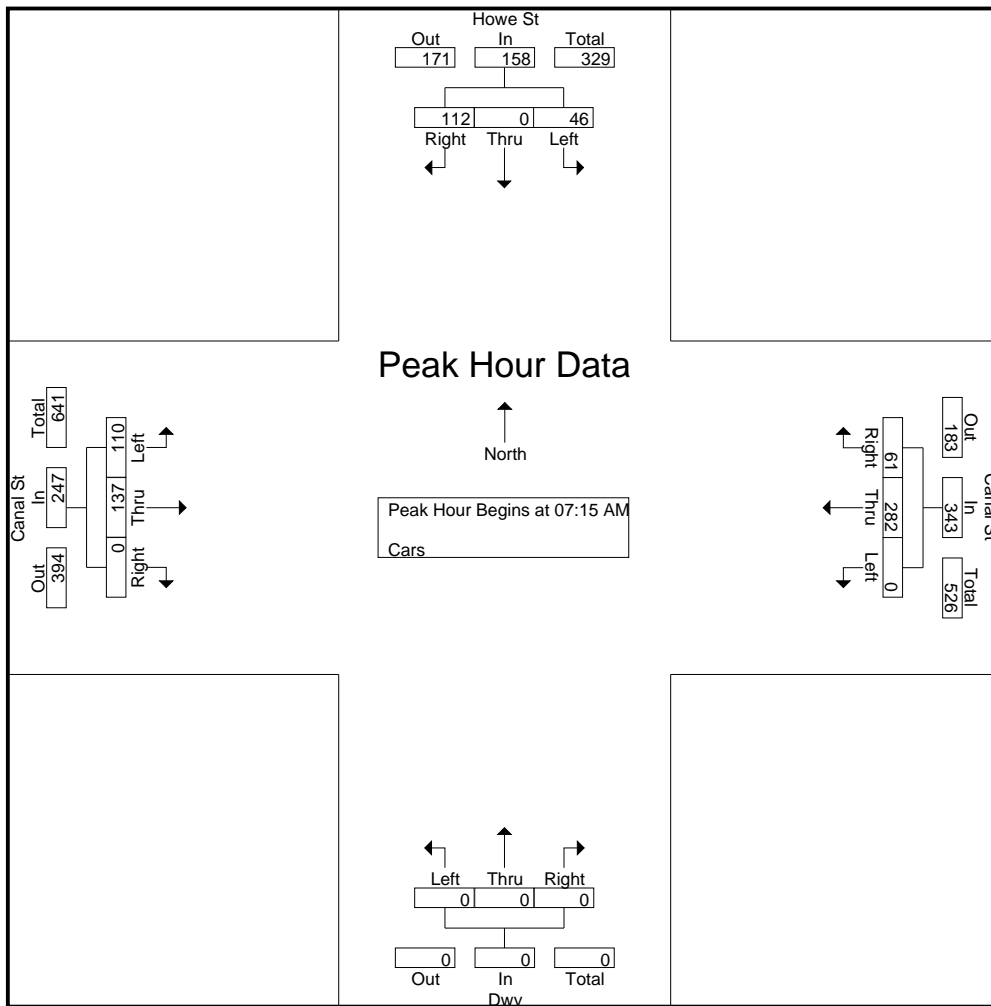
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Cars

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|------------|-----------------------|------------|------------|-------------------|----------|----------|-----------------------|------------|----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 12 | 0 | 12 | 0 | 52 | 11 | 0 | 0 | 0 | 13 | 29 | 0 | 129 |
| 07:15 AM | 5 | 0 | 15 | 0 | 75 | 16 | 0 | 0 | 0 | 21 | 37 | 0 | 169 |
| 07:30 AM | 12 | 0 | 25 | 0 | 85 | 13 | 0 | 0 | 0 | 30 | 40 | 0 | 205 |
| 07:45 AM | 14 | 0 | 38 | 0 | 74 | 13 | 0 | 0 | 0 | 28 | 33 | 0 | 200 |
| Total | 43 | 0 | 90 | 0 | 286 | 53 | 0 | 0 | 0 | 92 | 139 | 0 | 703 |
| 08:00 AM | 15 | 0 | 34 | 0 | 48 | 19 | 0 | 0 | 0 | 31 | 27 | 0 | 174 |
| 08:15 AM | 7 | 0 | 35 | 0 | 67 | 14 | 0 | 0 | 0 | 21 | 20 | 0 | 164 |
| 08:30 AM | 13 | 0 | 35 | 0 | 62 | 23 | 0 | 0 | 0 | 26 | 29 | 0 | 188 |
| 08:45 AM | 13 | 0 | 34 | 0 | 57 | 22 | 0 | 0 | 0 | 21 | 28 | 0 | 175 |
| Total | 48 | 0 | 138 | 0 | 234 | 78 | 0 | 0 | 0 | 99 | 104 | 0 | 701 |
| Grand Total | 91 | 0 | 228 | 0 | 520 | 131 | 0 | 0 | 0 | 191 | 243 | 0 | 1404 |
| Apprch % | 28.5 | 0 | 71.5 | 0 | 79.9 | 20.1 | 0 | 0 | 0 | 44 | 56 | 0 | |
| Total % | 6.5 | 0 | 16.2 | 0 | 37 | 9.3 | 0 | 0 | 0 | 13.6 | 17.3 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|------|-----------|------------|-----------------------|-----------|-----------|------------|-------------------|------|-------|------------|-----------------------|-----------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 5 | 0 | 15 | 20 | 0 | 75 | 16 | 91 | 0 | 0 | 0 | 0 | 21 | 37 | 0 | 58 | 169 |
| 07:30 AM | 12 | 0 | 25 | 37 | 0 | 85 | 13 | 98 | 0 | 0 | 0 | 0 | 30 | 40 | 0 | 70 | 205 |
| 07:45 AM | 14 | 0 | 38 | 52 | 0 | 74 | 13 | 87 | 0 | 0 | 0 | 0 | 28 | 33 | 0 | 61 | 200 |
| 08:00 AM | 15 | 0 | 34 | 49 | 0 | 48 | 19 | 67 | 0 | 0 | 0 | 0 | 31 | 27 | 0 | 58 | 174 |
| Total Volume | 46 | 0 | 112 | 158 | 0 | 282 | 61 | 343 | 0 | 0 | 0 | 0 | 110 | 137 | 0 | 247 | 748 |
| % App. Total | 29.1 | 0 | 70.9 | | 0 | 82.2 | 17.8 | | 0 | 0 | 0 | | 44.5 | 55.5 | 0 | | |
| PHF | .767 | .000 | .737 | .760 | .000 | .829 | .803 | .875 | .000 | .000 | .000 | .000 | .887 | .856 | .000 | .882 | .912 |

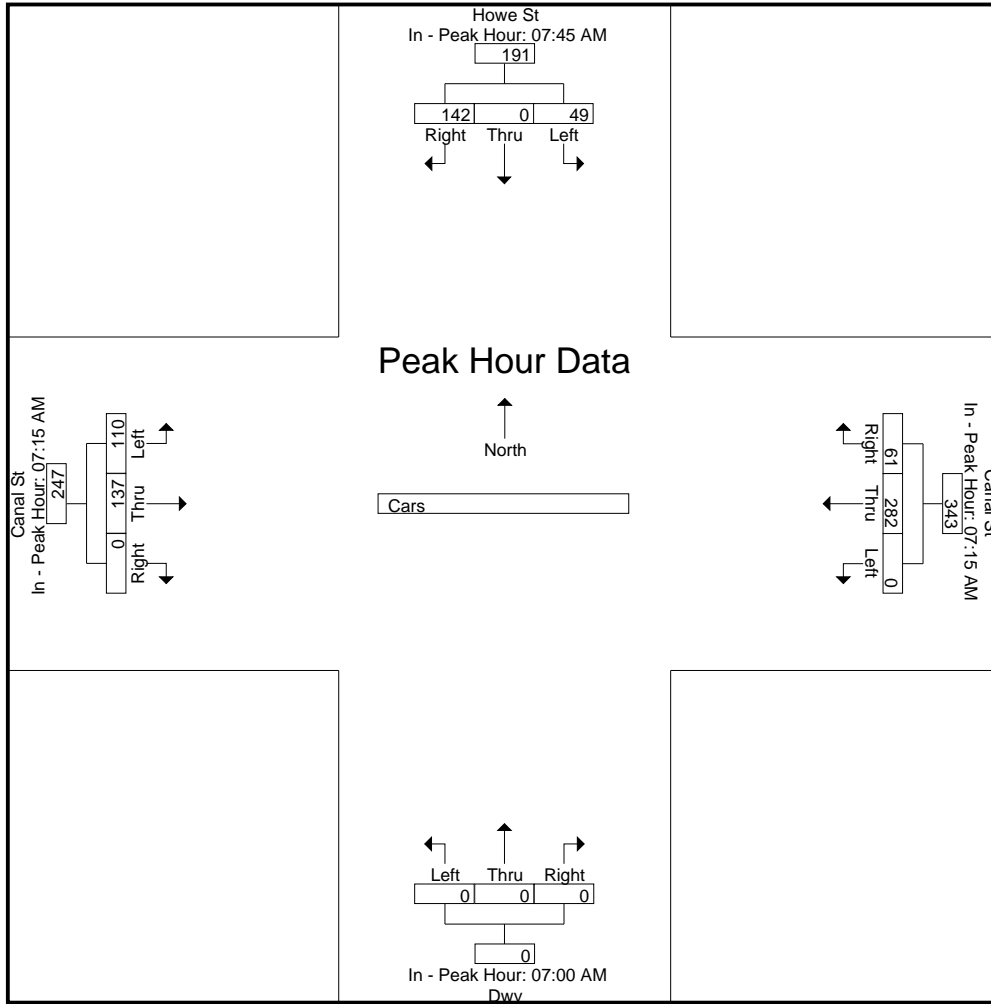
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:45 AM | | | | 07:15 AM | | | | 07:00 AM | | | | 07:15 AM | | | |
|--------------|----------|------|-----------|-----------|----------|-----------|-----------|-----------|----------|------|------|------|-----------|-----------|------|-----------|
| +0 mins. | 14 | 0 | 38 | 52 | 0 | 75 | 16 | 91 | 0 | 0 | 0 | 0 | 21 | 37 | 0 | 58 |
| +15 mins. | 15 | 0 | 34 | 49 | 0 | 85 | 13 | 98 | 0 | 0 | 0 | 0 | 30 | 40 | 0 | 70 |
| +30 mins. | 7 | 0 | 35 | 42 | 0 | 74 | 13 | 87 | 0 | 0 | 0 | 0 | 28 | 33 | 0 | 61 |
| +45 mins. | 13 | 0 | 35 | 48 | 0 | 48 | 19 | 67 | 0 | 0 | 0 | 0 | 31 | 27 | 0 | 58 |
| Total Volume | 49 | 0 | 142 | 191 | 0 | 282 | 61 | 343 | 0 | 0 | 0 | 0 | 110 | 137 | 0 | 247 |
| % App. Total | 25.7 | 0 | 74.3 | | 0 | 82.2 | 17.8 | | 0 | 0 | 0 | 0 | 44.5 | 55.5 | 0 | |
| PHF | .817 | .000 | .934 | .918 | .000 | .829 | .803 | .875 | .000 | .000 | .000 | .000 | .887 | .856 | .000 | .882 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

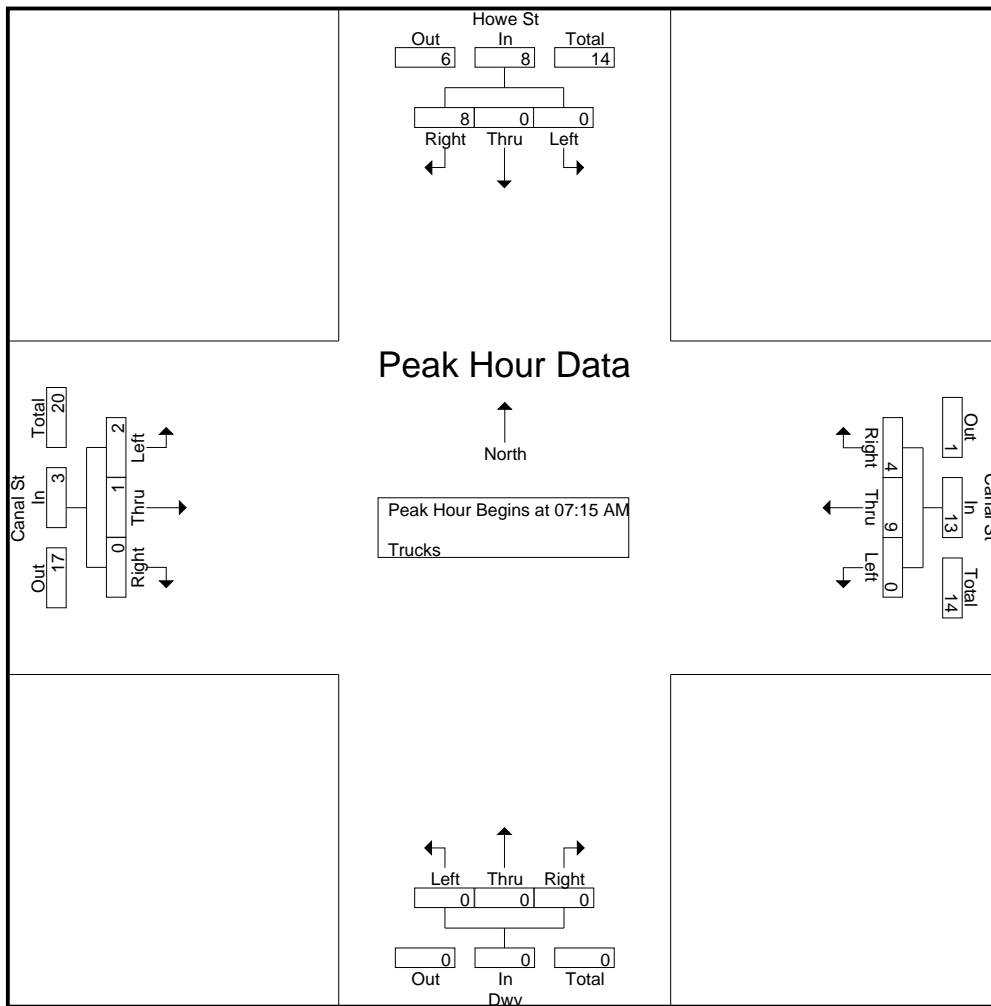
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Trucks

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|-----------|-----------------------|-----------|----------|-------------------|----------|----------|-----------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:15 AM | 0 | 0 | 2 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 07:30 AM | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:45 AM | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 9 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 08:00 AM | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 8 |
| 08:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 7 |
| 08:45 AM | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 4 | 0 | 7 | 2 | 0 | 0 | 0 | 5 | 2 | 0 | 20 |
| Grand Total | 0 | 0 | 13 | 0 | 15 | 5 | 0 | 0 | 0 | 5 | 2 | 0 | 40 |
| Apprch % | 0 | 0 | 100 | 0 | 75 | 25 | 0 | 0 | 0 | 71.4 | 28.6 | 0 | |
| Total % | 0 | 0 | 32.5 | 0 | 37.5 | 12.5 | 0 | 0 | 0 | 12.5 | 5 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|----------|------------|------------|-----------------------|-------------|-------------|------------|-------------------|----------|----------|------------|-----------------------|-------------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 2 | 2 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 07:30 AM | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:45 AM | 0 | 0 | 3 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 08:00 AM | 0 | 0 | 2 | 2 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 8 |
| Total Volume | 0 | 0 | 8 | 8 | 0 | 9 | 4 | 13 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 24 |
| % App. Total | 0 | 0 | 100 | | 0 | 69.2 | 30.8 | | 0 | 0 | 0 | | 66.7 | 33.3 | 0 | | |
| PHF | .000 | .000 | .667 | .667 | .000 | .563 | .500 | .542 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .250 | .750 |

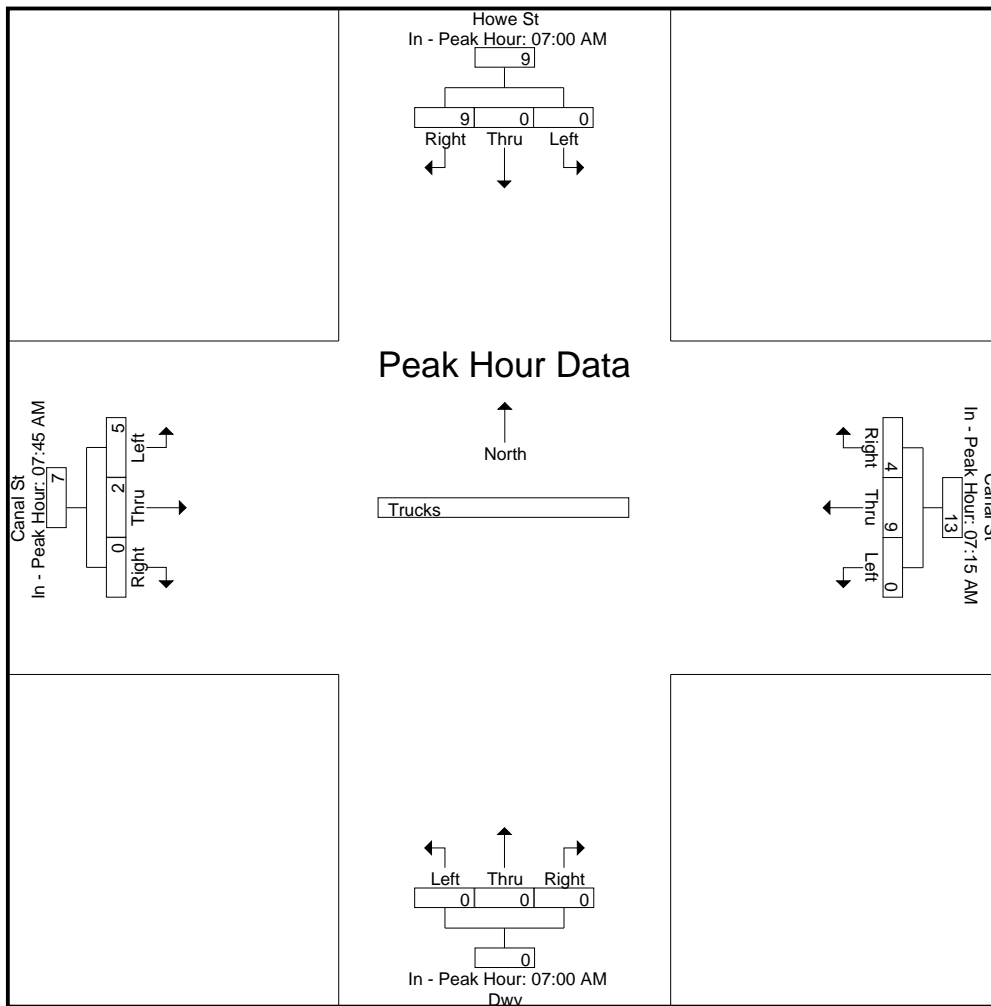
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:15 AM | | | | 07:00 AM | | | | 07:45 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 3 | 3 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 2 | 2 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| +30 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 3 | 3 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 |
| Total Volume | 0 | 0 | 9 | 9 | 0 | 9 | 4 | 13 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 7 |
| % App. Total | 0 | 0 | 100 | | 0 | 69.2 | 30.8 | | 0 | 0 | 0 | | 71.4 | 28.6 | 0 | |
| PHF | .000 | .000 | .750 | .750 | .000 | .563 | .500 | .542 | .000 | .000 | .000 | .000 | .417 | .500 | .000 | .438 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

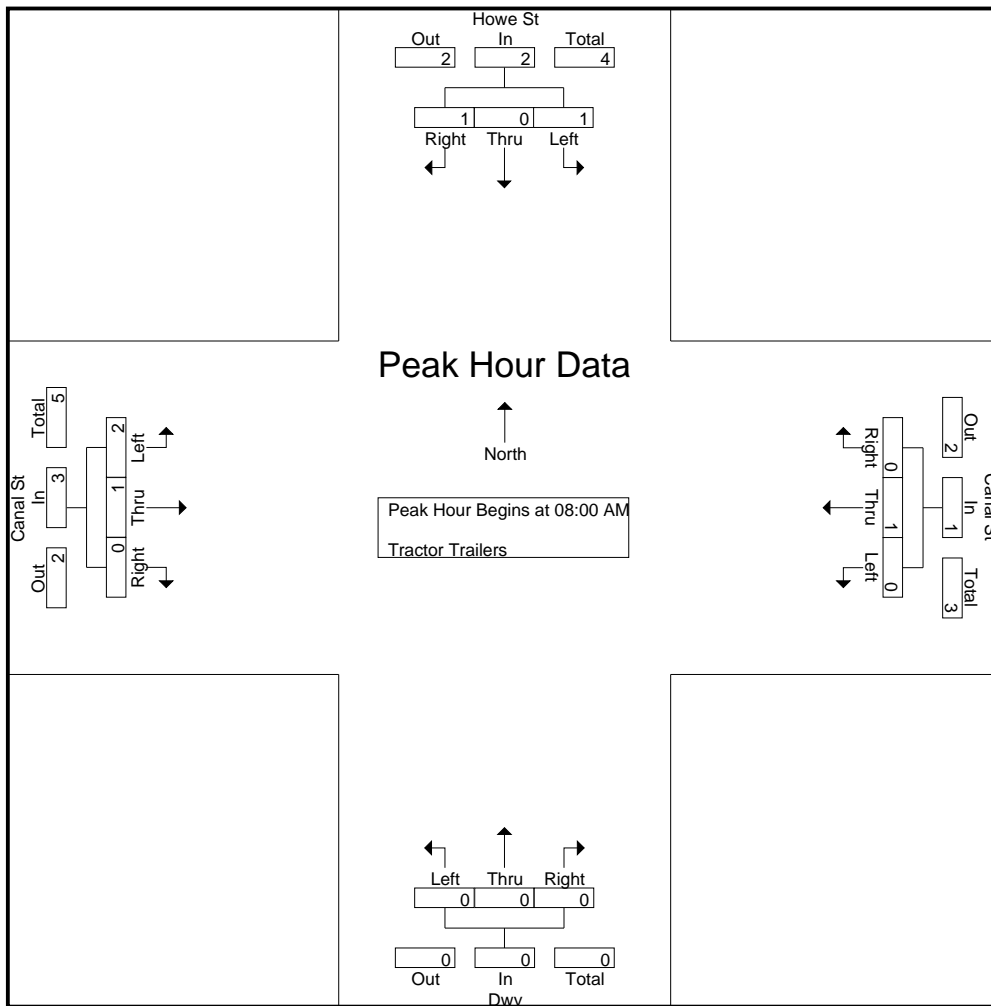
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Tractor Trailers

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|----------|-----------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 08:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| Total | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 6 |
| Grand Total | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 10 |
| Apprch % | 33.3 | 0 | 66.7 | 0 | 100 | 0 | 0 | 0 | 0 | 50 | 50 | 0 | |
| Total % | 10 | 0 | 20 | 0 | 30 | 0 | 0 | 0 | 0 | 20 | 20 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|----------|-----------|------------|-----------------------|------------|----------|------------|-------------------|----------|----------|------------|-----------------------|-------------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 08:30 AM | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| Total Volume | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | |
| % App. Total | 50 | 0 | 50 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 66.7 | 33.3 | 0 | | |
| PHF | .250 | .000 | .250 | .250 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .500 | .250 | .000 | .375 | |

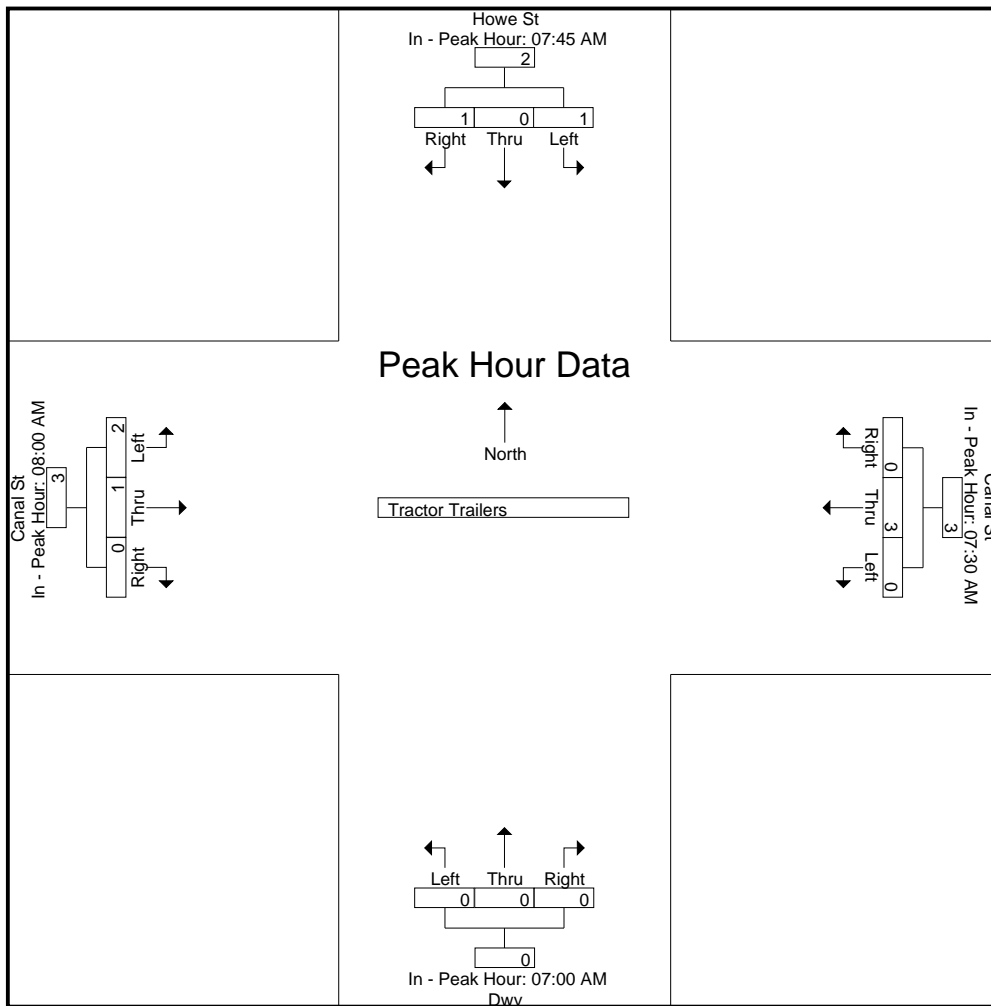
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:45 AM | | | | 07:30 AM | | | | 07:00 AM | | | | 08:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| Total Volume | 1 | 0 | 1 | 2 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| % App. Total | 50 | 0 | 50 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 66.7 | 33.3 | 0 | |
| PHF | .250 | .000 | .250 | .250 | .000 | .750 | .000 | .750 | .000 | .000 | .000 | .000 | .500 | .250 | .000 | .375 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

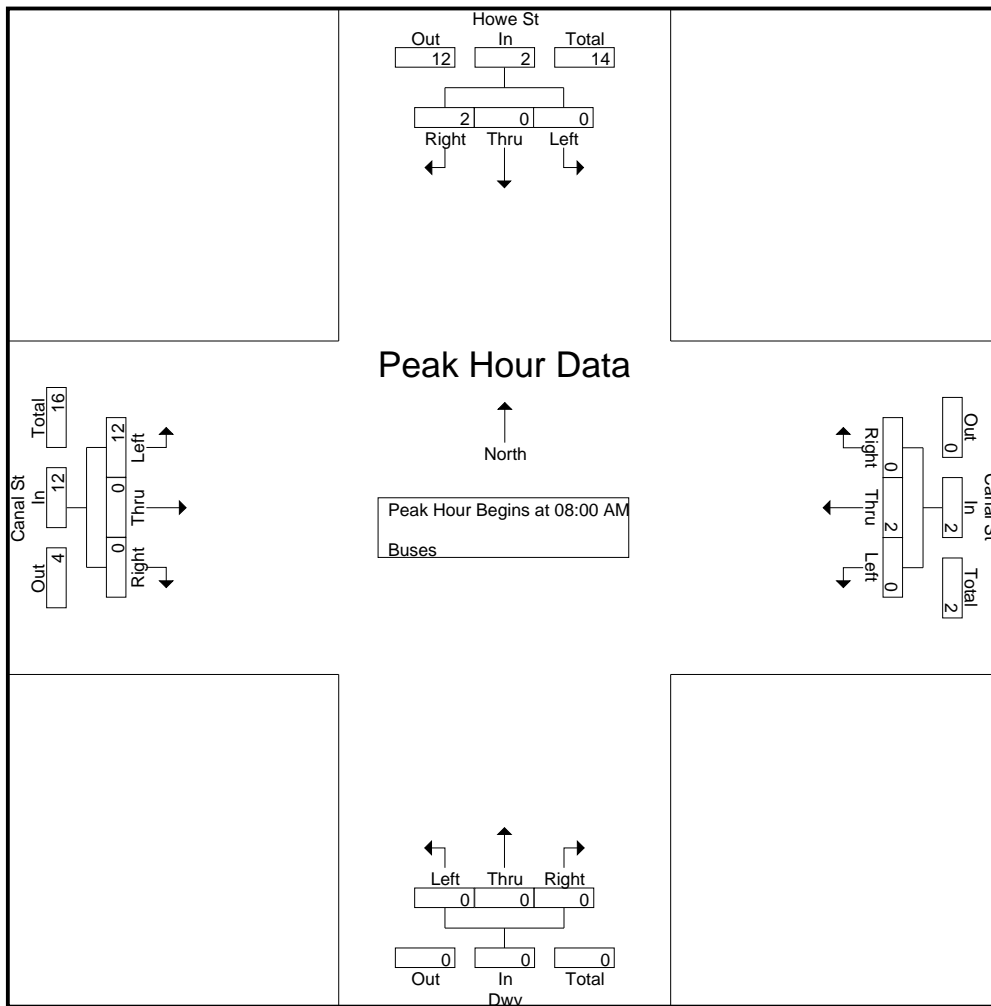
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Buses

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|----------|-----------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| 07:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 10 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 08:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 4 |
| 08:30 AM | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 |
| Total | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 16 |
| Grand Total | 1 | 0 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 12 | 2 | 0 | 26 |
| Apprch % | 20 | 0 | 80 | 0 | 100 | 0 | 0 | 0 | 0 | 85.7 | 14.3 | 0 | |
| Total % | 3.8 | 0 | 15.4 | 0 | 26.9 | 0 | 0 | 0 | 0 | 46.2 | 7.7 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|----------|------------|------------|-----------------------|------------|----------|------------|-------------------|----------|----------|------------|-----------------------|----------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | |
| 08:30 AM | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | |
| Total Volume | 0 | 0 | 2 | 2 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | |
| % App. Total | 0 | 0 | 100 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 100 | 0 | 0 | | |
| PHF | .000 | .000 | .250 | .250 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .429 | .000 | .000 | .429 | |

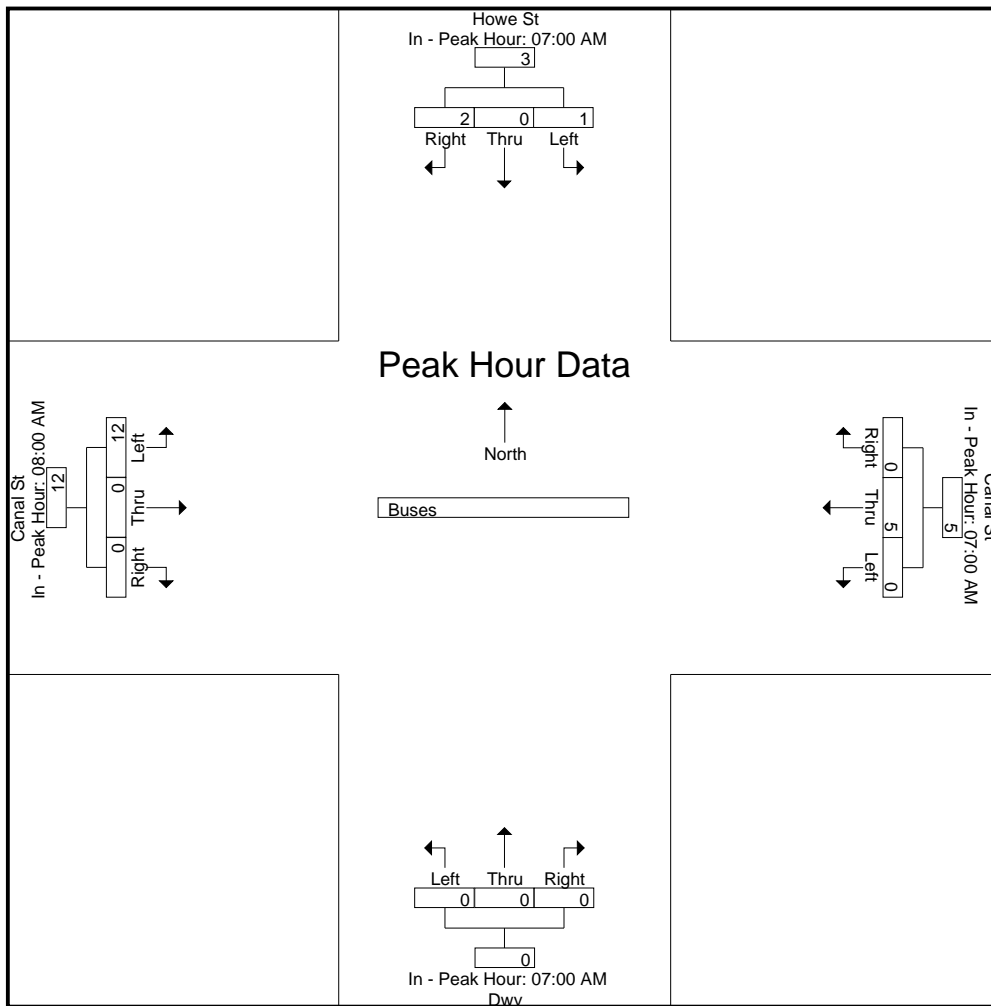
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



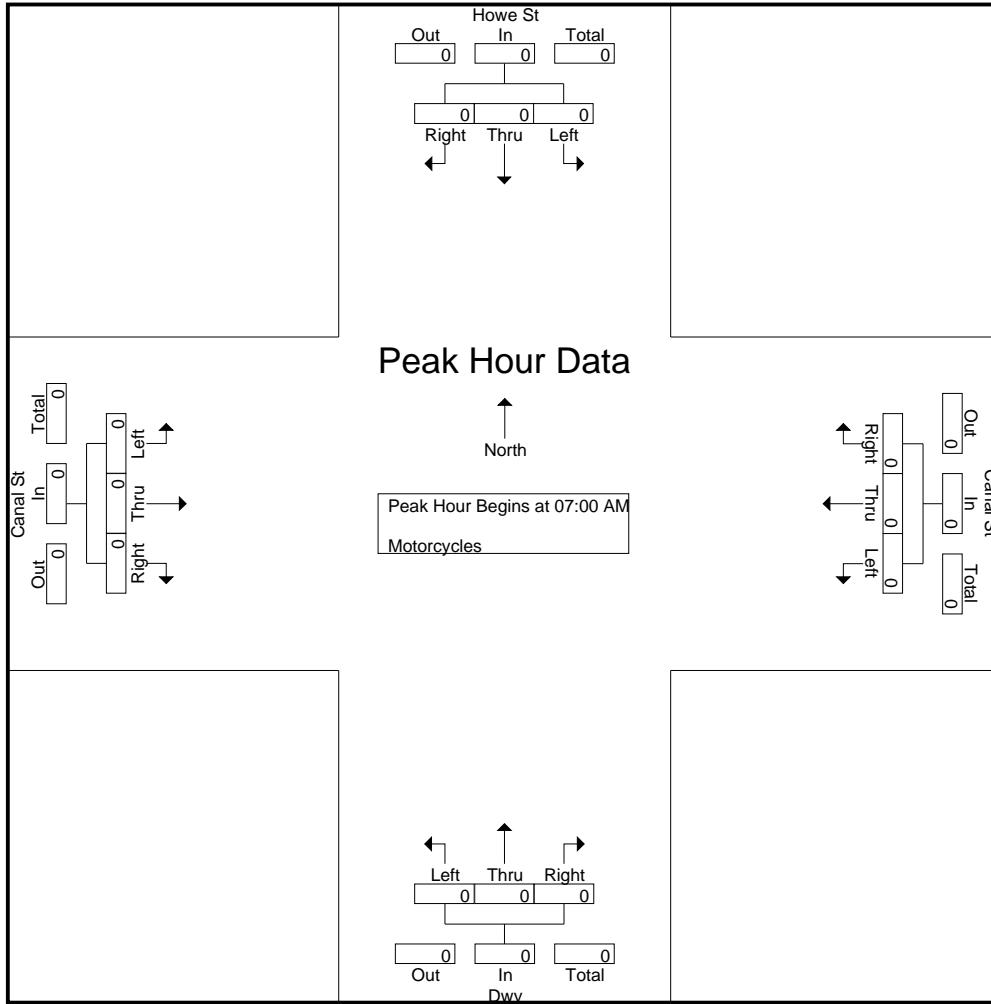
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 08:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| +15 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| +30 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 |
| Total Volume | 1 | 0 | 2 | 3 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 |
| % App. Total | 33.3 | 0 | 66.7 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 100 | 0 | 0 | |
| PHF | .250 | .000 | .500 | .750 | .000 | .313 | .000 | .313 | .000 | .000 | .000 | .000 | .429 | .000 | .000 | .429 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



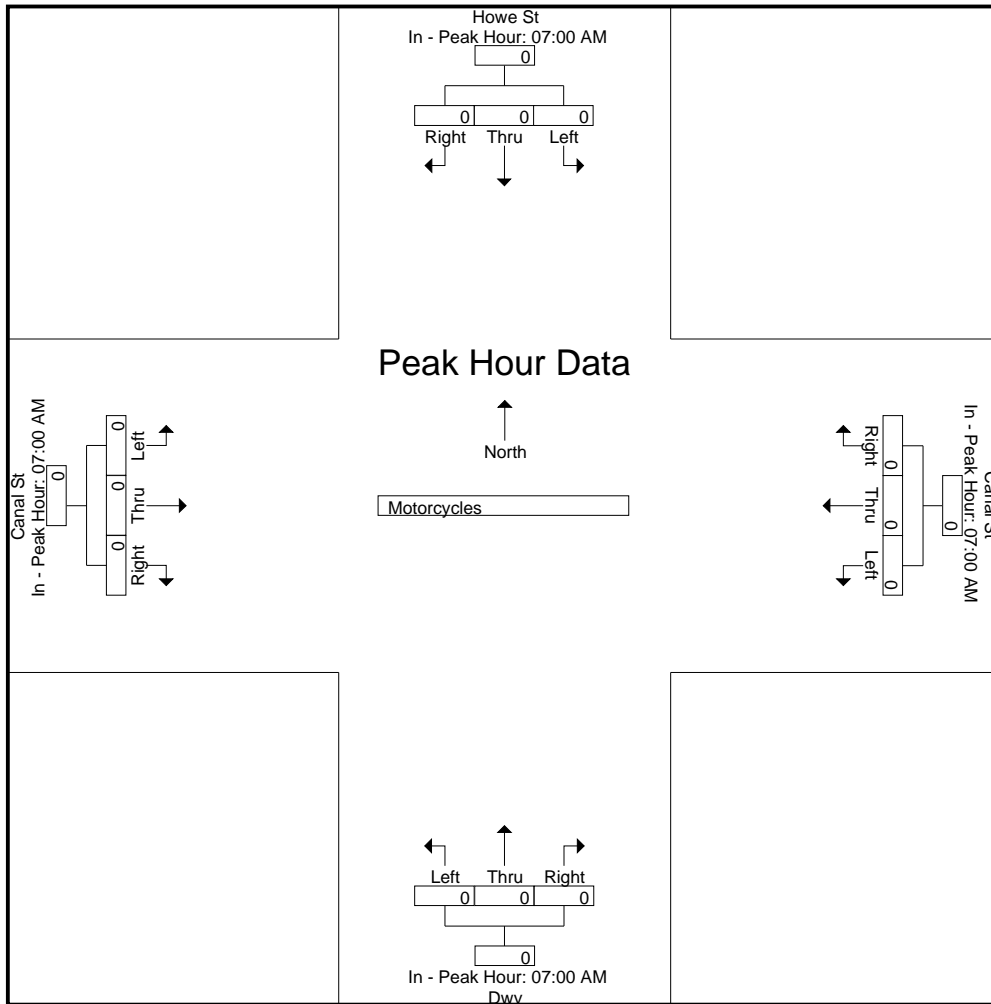
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

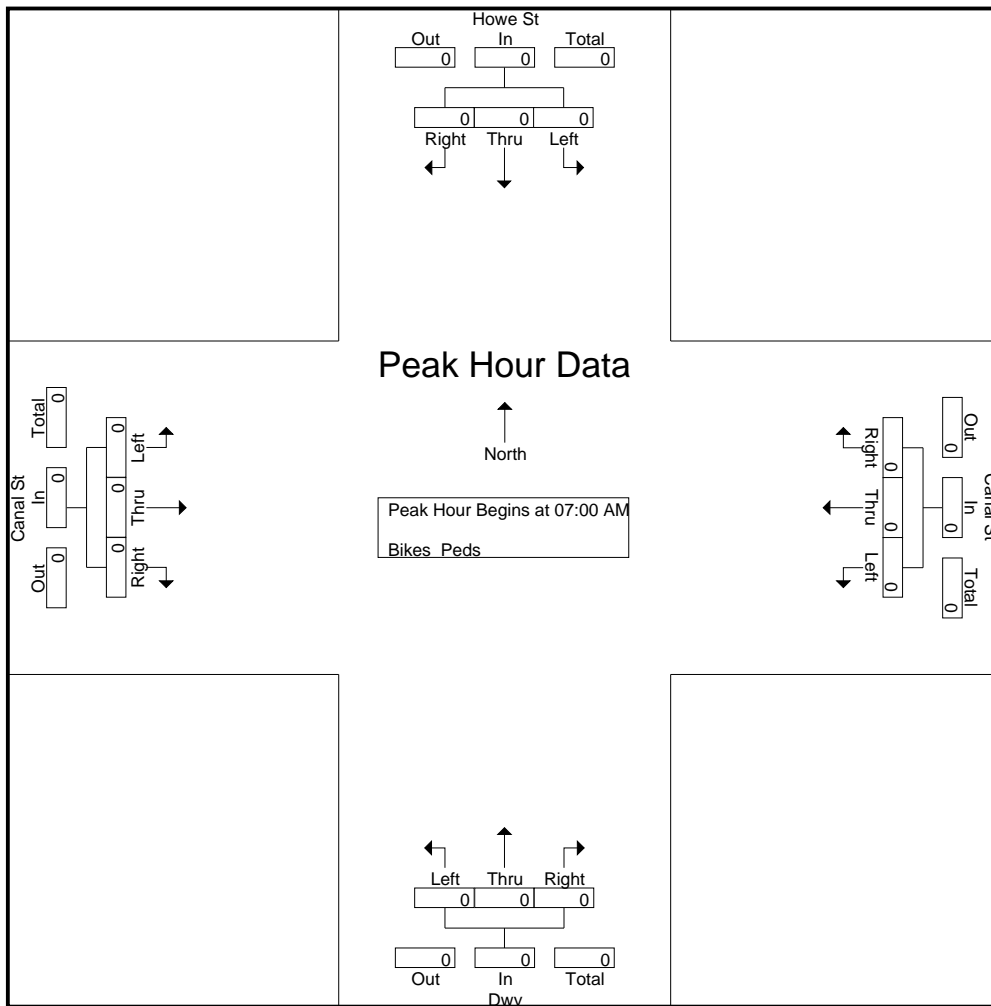
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Bikes Peds

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|----------|----------|----------|--------------------|----------|----------|----------|----------------|----------|----------|----------|--------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| Apprch % | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | | | | | | | | | | | | | | | | | 100 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total | |
|--|--------------------|----------|----------|------------|--------------------|----------|----------|------------|----------------|----------|----------|------------|--------------------|----------|----------|------------|------------|----------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

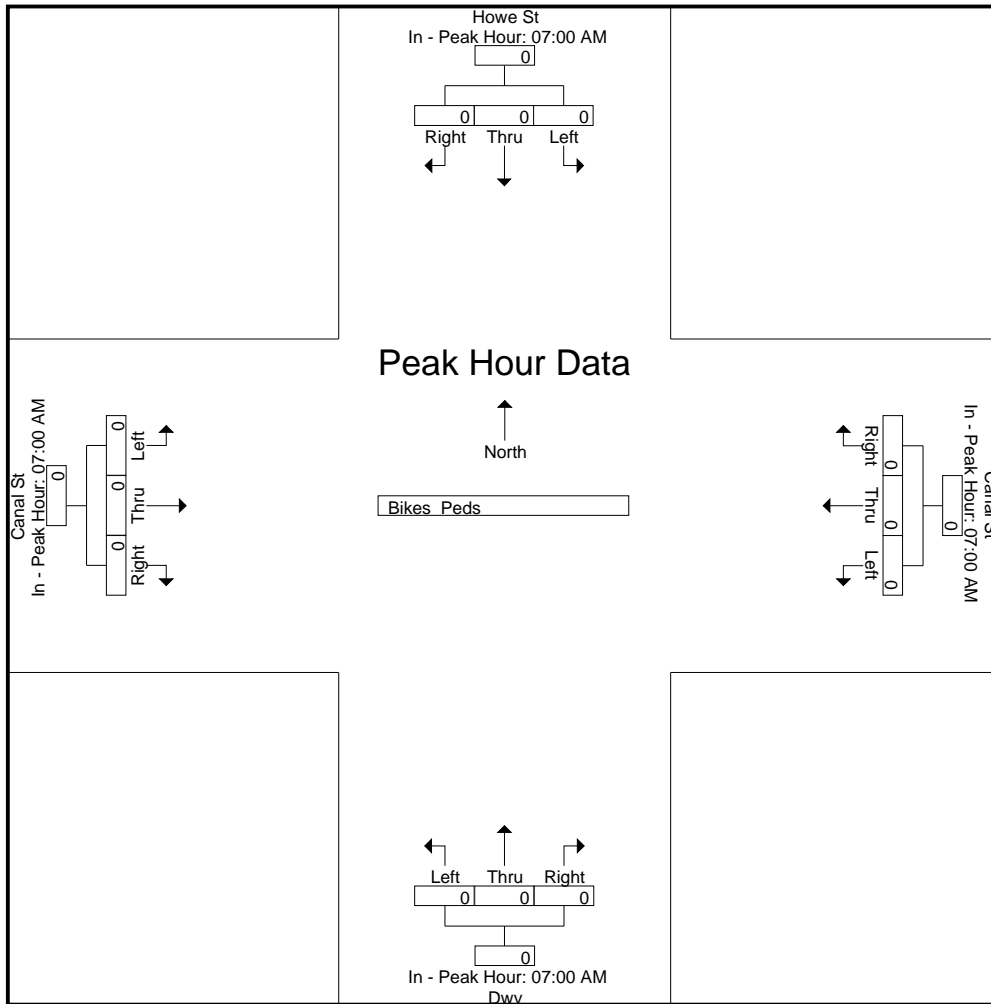
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



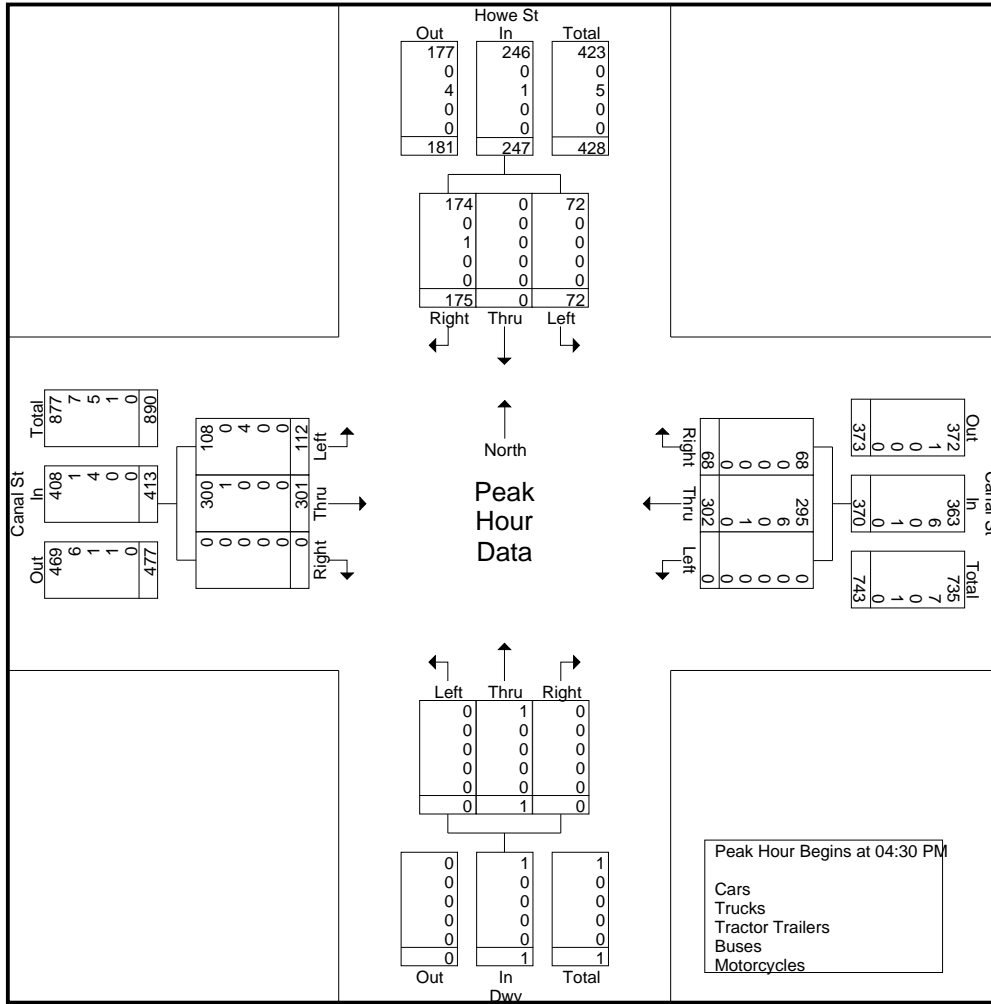
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



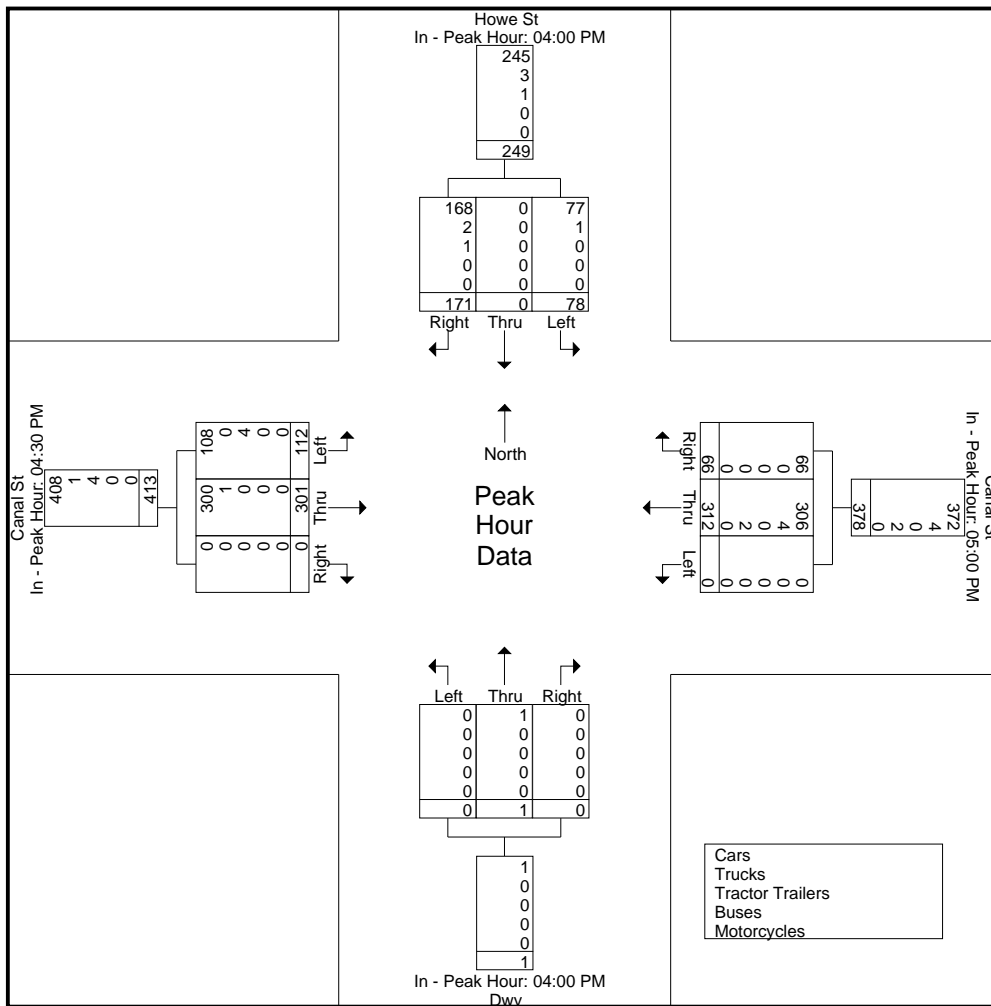
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 05:00 PM | | | | 04:00 PM | | | | 04:30 PM | | | |
|--------------------|-----------|------|-----------|-----------|----------|-----------|-----------|------------|----------|----------|------|----------|-----------|-----------|------|------------|
| +0 mins. | 22 | 0 | 50 | 72 | 0 | 96 | 20 | 116 | 0 | 0 | 0 | 0 | 23 | 79 | 0 | 102 |
| +15 mins. | 14 | 0 | 35 | 49 | 0 | 75 | 13 | 88 | 0 | 0 | 0 | 0 | 24 | 67 | 0 | 91 |
| +30 mins. | 17 | 0 | 51 | 68 | 0 | 70 | 17 | 87 | 0 | 0 | 0 | 0 | 31 | 89 | 0 | 120 |
| +45 mins. | 25 | 0 | 35 | 60 | 0 | 71 | 16 | 87 | 0 | 1 | 0 | 1 | 34 | 66 | 0 | 100 |
| Total Volume | 78 | 0 | 171 | 249 | 0 | 312 | 66 | 378 | 0 | 1 | 0 | 1 | 112 | 301 | 0 | 413 |
| % App. Total | 31.3 | 0 | 68.7 | | 0 | 82.5 | 17.5 | | 0 | 100 | 0 | | 27.1 | 72.9 | 0 | |
| PHF | .780 | .000 | .838 | .865 | .000 | .813 | .825 | .815 | .000 | .250 | .000 | .250 | .824 | .846 | .000 | .860 |
| Cars | 77 | 0 | 168 | 245 | 0 | 306 | 66 | 372 | 0 | 1 | 0 | 1 | 108 | 300 | 0 | 408 |
| % Cars | 98.7 | 0 | 98.2 | 98.4 | 0 | 98.1 | 100 | 98.4 | 0 | 100 | 0 | 100 | 96.4 | 99.7 | 0 | 98.8 |
| Trucks | 1 | 0 | 2 | 3 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| % Trucks | 1.3 | 0 | 1.2 | 1.2 | 0 | 1.3 | 0 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.2 |
| Tractor Trailers | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| % Tractor Trailers | 0 | 0 | 0.6 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.6 | 0 | 0 | 1 |
| Buses | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 3

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

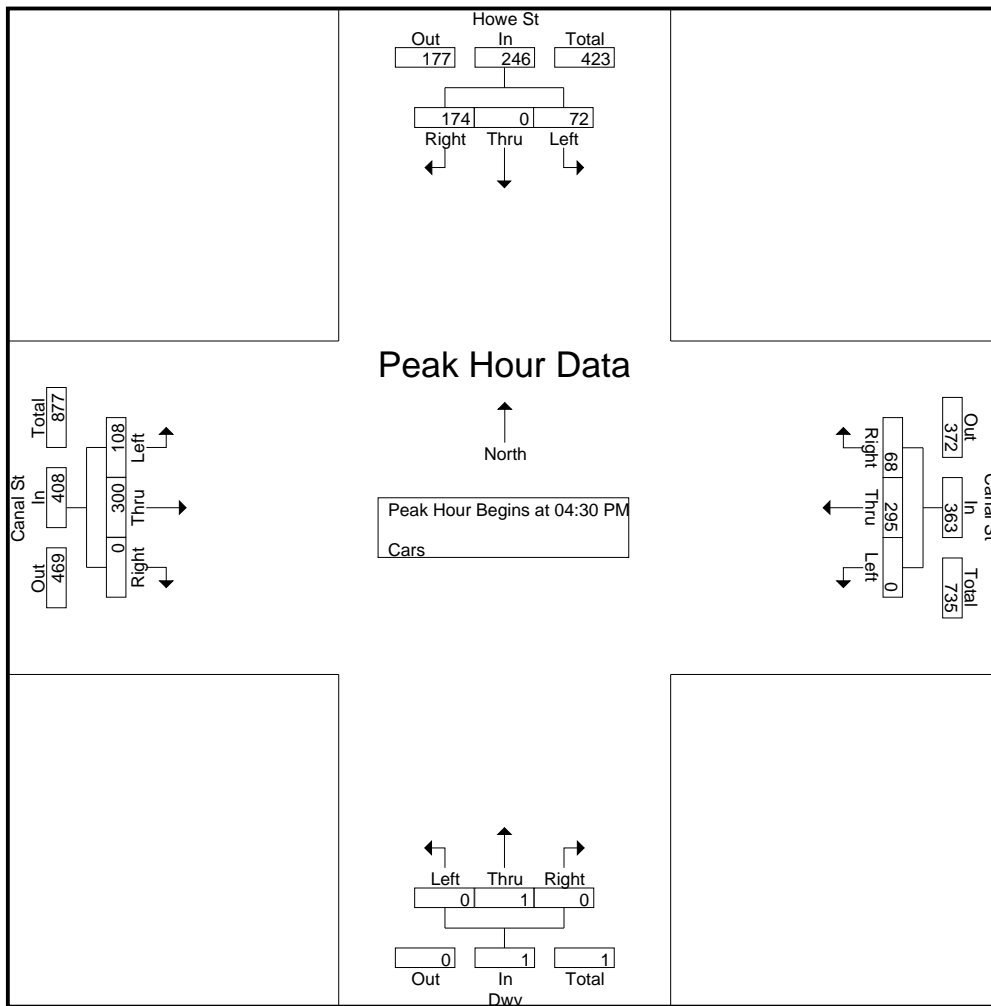
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Cars

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|------------|-----------------------|------------|------------|-------------------|----------|----------|-----------------------|------------|----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 21 | 0 | 48 | 0 | 64 | 16 | 0 | 0 | 0 | 31 | 73 | 0 | 253 |
| 04:15 PM | 14 | 0 | 34 | 0 | 78 | 14 | 0 | 0 | 0 | 27 | 62 | 0 | 229 |
| 04:30 PM | 17 | 0 | 51 | 0 | 65 | 18 | 0 | 0 | 0 | 21 | 78 | 0 | 250 |
| 04:45 PM | 25 | 0 | 35 | 0 | 64 | 17 | 0 | 1 | 0 | 23 | 67 | 0 | 232 |
| Total | 77 | 0 | 168 | 0 | 271 | 65 | 0 | 1 | 0 | 102 | 280 | 0 | 964 |
| 05:00 PM | 16 | 0 | 39 | 0 | 93 | 20 | 0 | 0 | 0 | 30 | 89 | 0 | 287 |
| 05:15 PM | 14 | 0 | 49 | 0 | 73 | 13 | 0 | 0 | 0 | 34 | 66 | 0 | 249 |
| 05:30 PM | 16 | 0 | 43 | 0 | 70 | 17 | 0 | 0 | 0 | 24 | 59 | 0 | 229 |
| 05:45 PM | 20 | 0 | 35 | 0 | 70 | 16 | 0 | 0 | 0 | 28 | 57 | 0 | 226 |
| Total | 66 | 0 | 166 | 0 | 306 | 66 | 0 | 0 | 0 | 116 | 271 | 0 | 991 |
| Grand Total | 143 | 0 | 334 | 0 | 577 | 131 | 0 | 1 | 0 | 218 | 551 | 0 | 1955 |
| Apprch % | 30 | 0 | 70 | 0 | 81.5 | 18.5 | 0 | 100 | 0 | 28.3 | 71.7 | 0 | |
| Total % | 7.3 | 0 | 17.1 | 0 | 29.5 | 6.7 | 0 | 0.1 | 0 | 11.2 | 28.2 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|----------|-------------|------------|-----------------------|-------------|-------------|------------|-------------------|------------|----------|------------|-----------------------|-------------|----------|------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 17 | 0 | 51 | 68 | 0 | 65 | 18 | 83 | 0 | 0 | 0 | 0 | 21 | 78 | 0 | 99 | 250 |
| 04:45 PM | 25 | 0 | 35 | 60 | 0 | 64 | 17 | 81 | 0 | 1 | 0 | 1 | 23 | 67 | 0 | 90 | 232 |
| 05:00 PM | 16 | 0 | 39 | 55 | 0 | 93 | 20 | 113 | 0 | 0 | 0 | 0 | 30 | 89 | 0 | 119 | 287 |
| 05:15 PM | 14 | 0 | 49 | 63 | 0 | 73 | 13 | 86 | 0 | 0 | 0 | 0 | 34 | 66 | 0 | 100 | 249 |
| Total Volume | 72 | 0 | 174 | 246 | 0 | 295 | 68 | 363 | 0 | 1 | 0 | 1 | 108 | 300 | 0 | 408 | 1018 |
| % App. Total | 29.3 | 0 | 70.7 | | 0 | 81.3 | 18.7 | | 0 | 100 | 0 | | 26.5 | 73.5 | 0 | | |
| PHF | .720 | .000 | .853 | .904 | .000 | .793 | .850 | .803 | .000 | .250 | .000 | .250 | .794 | .843 | .000 | .857 | .887 |

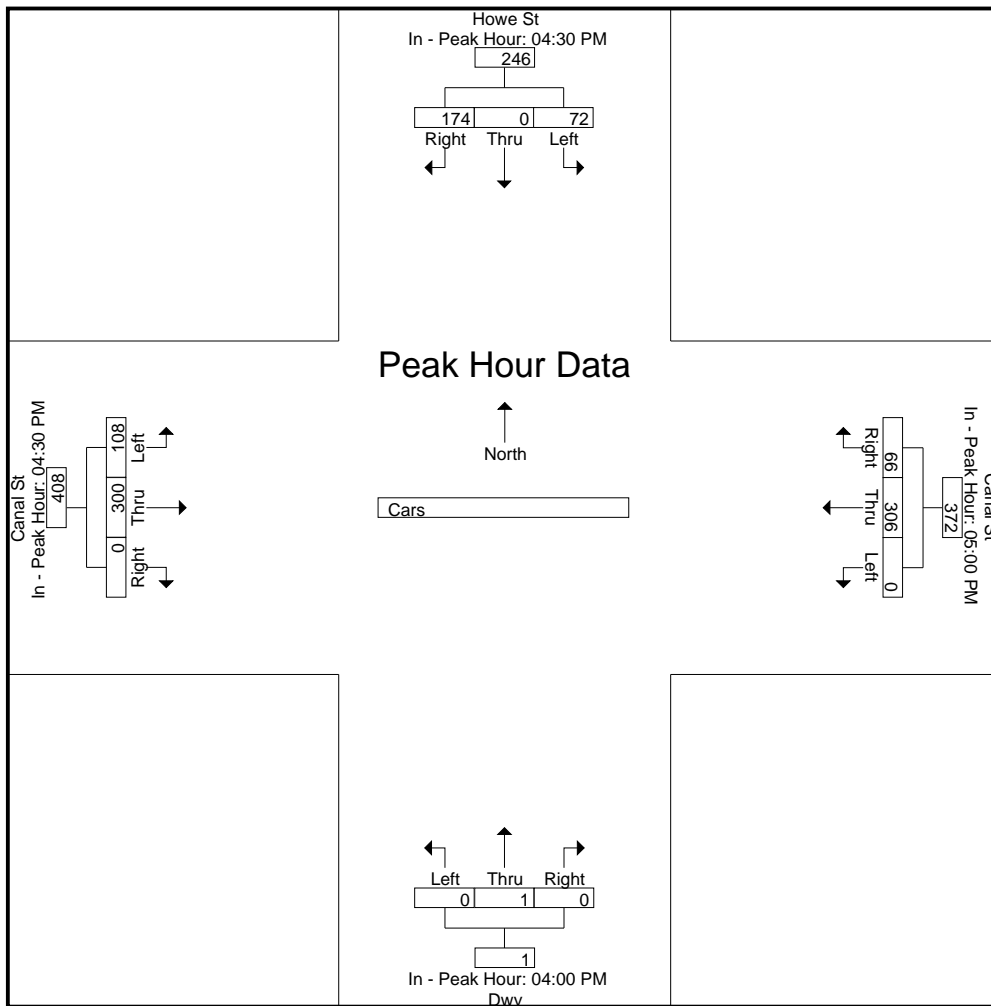
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 05:00 PM | | | | 04:00 PM | | | | 04:30 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 17 | 0 | 51 | 68 | 0 | 93 | 20 | 113 | 0 | 0 | 0 | 0 | 21 | 78 | 0 | 99 |
| +15 mins. | 25 | 0 | 35 | 60 | 0 | 73 | 13 | 86 | 0 | 0 | 0 | 0 | 23 | 67 | 0 | 90 |
| +30 mins. | 16 | 0 | 39 | 55 | 0 | 70 | 17 | 87 | 0 | 0 | 0 | 0 | 30 | 89 | 0 | 119 |
| +45 mins. | 14 | 0 | 49 | 63 | 0 | 70 | 16 | 86 | 0 | 1 | 0 | 1 | 34 | 66 | 0 | 100 |
| Total Volume | 72 | 0 | 174 | 246 | 0 | 306 | 66 | 372 | 0 | 1 | 0 | 1 | 108 | 300 | 0 | 408 |
| % App. Total | 29.3 | 0 | 70.7 | | 0 | 82.3 | 17.7 | | 0 | 100 | 0 | | 26.5 | 73.5 | 0 | |
| PHF | .720 | .000 | .853 | .904 | .000 | .823 | .825 | .823 | .000 | .250 | .000 | .250 | .794 | .843 | .000 | .857 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

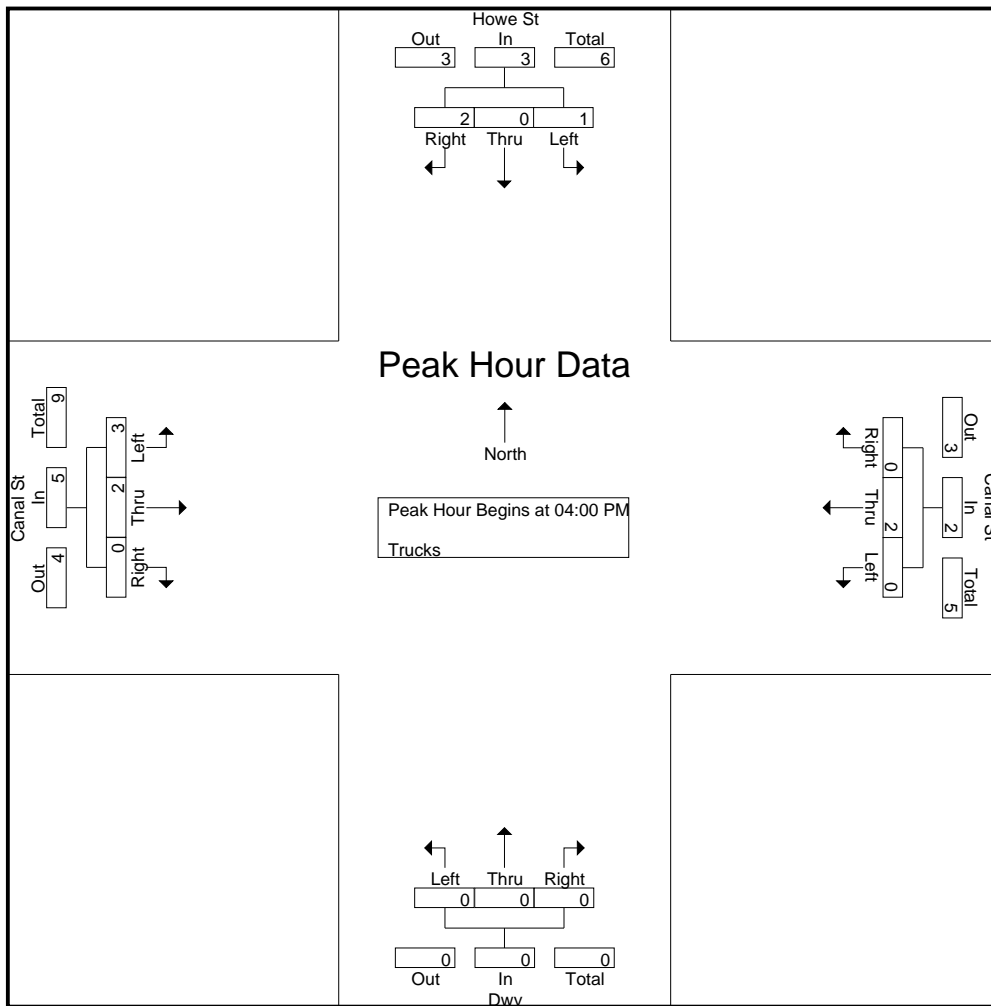
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Trucks

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|----------|-----------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 04:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 10 |
| 05:00 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:15 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Grand Total | 1 | 0 | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 14 |
| Apprch % | 33.3 | 0 | 66.7 | 0 | 100 | 0 | 0 | 0 | 0 | 60 | 40 | 0 | |
| Total % | 7.1 | 0 | 14.3 | 0 | 42.9 | 0 | 0 | 0 | 0 | 21.4 | 14.3 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|----------|-------------|------------|-----------------------|------------|----------|------------|-------------------|----------|----------|------------|-----------------------|-----------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| 04:15 PM | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 1 | 0 | 2 | 3 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 5 | 10 |
| % App. Total | 33.3 | 0 | 66.7 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 60 | 40 | 0 | | |
| PHF | .250 | .000 | .500 | .375 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .375 | .500 | .000 | .417 | .625 |

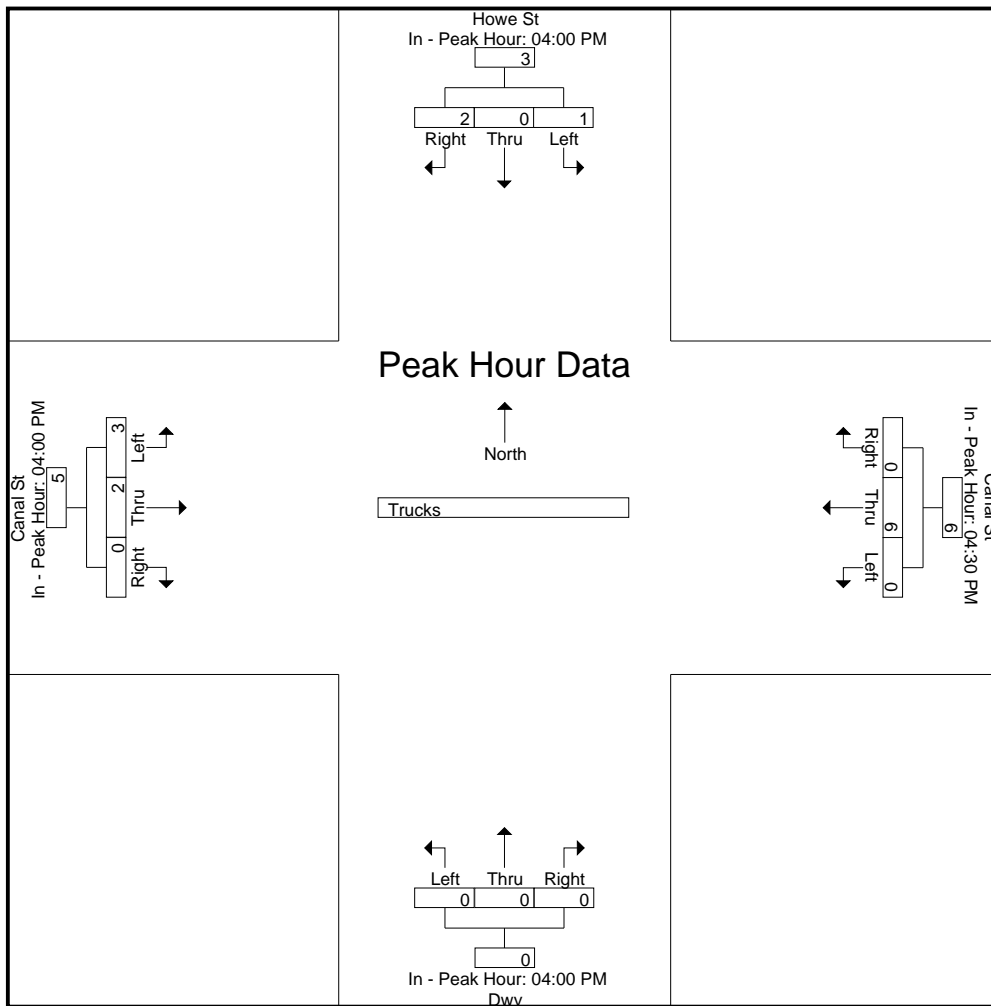
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:30 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| +15 mins. | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 2 | 3 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 5 |
| % App. Total | 33.3 | 0 | 66.7 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 60 | 40 | 0 | |
| PHF | .250 | .000 | .500 | .375 | .000 | .750 | .000 | .750 | .000 | .000 | .000 | .000 | .375 | .500 | .000 | .417 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

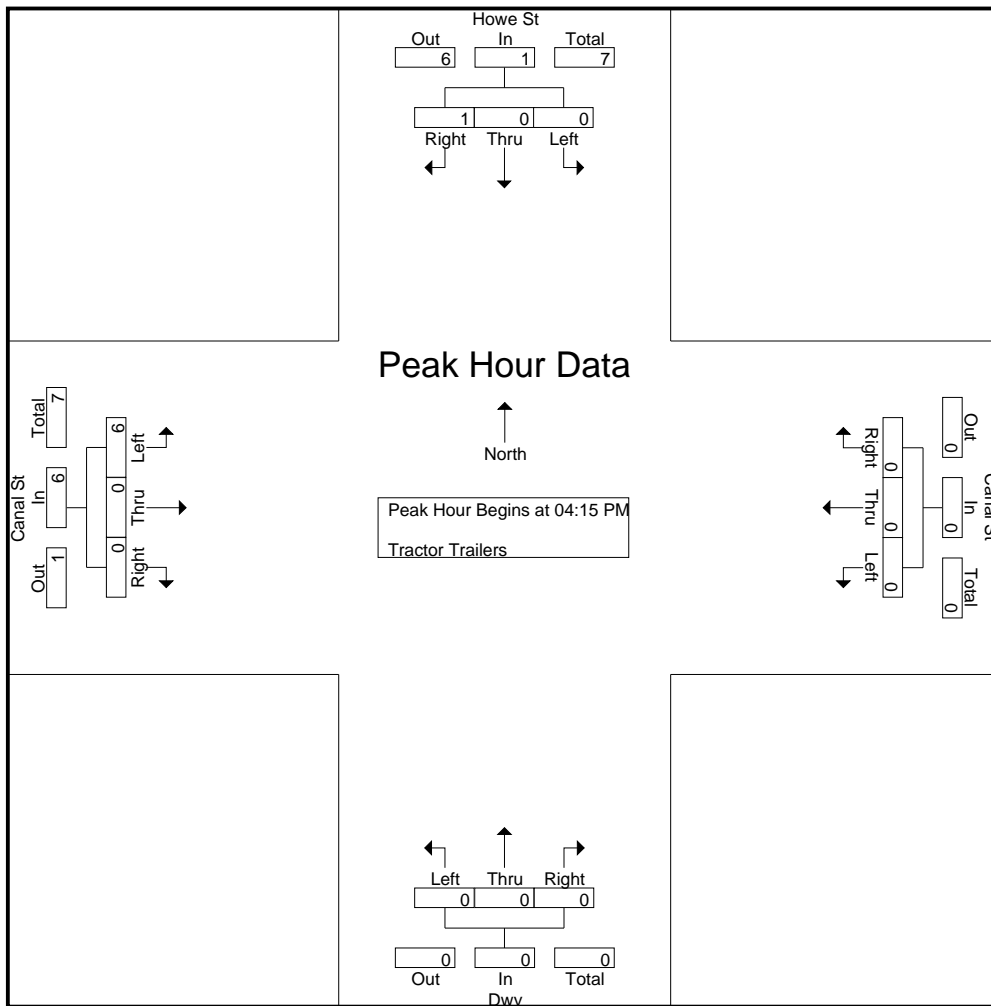
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Tractor Trailers

| Start Time | Howe St From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|-----------------------|----------|----------|-----------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 6 |
| 05:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| Grand Total | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 8 |
| Apprch % | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |
| Total % | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|-----------------------|----------|------------|------------|-----------------------|----------|----------|------------|-------------------|----------|----------|------------|-----------------------|----------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | | | | | | | | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 7 |
| % App. Total | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 100 | 0 | 0 | | |
| PHF | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .750 | .000 | .000 | .750 | .875 |

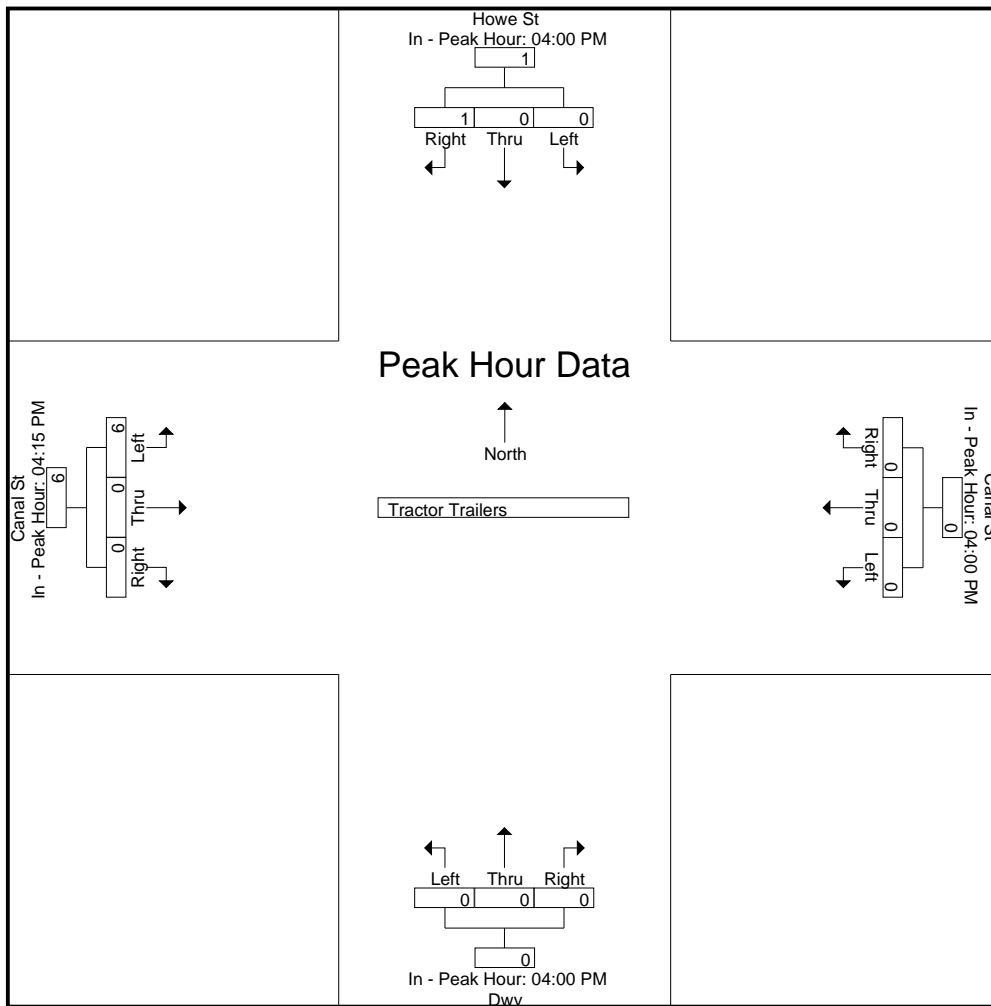
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



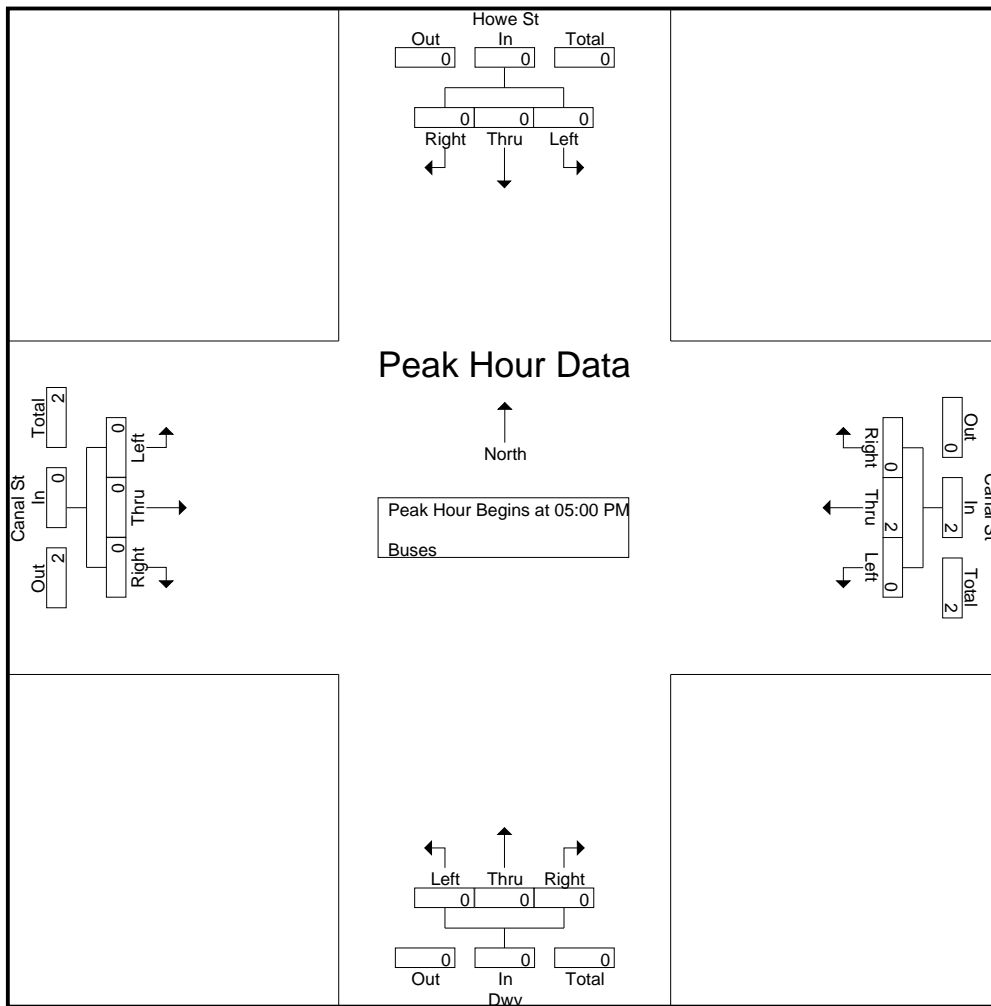
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:15 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| % App. Total | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 100 | 0 | 0 | |
| PHF | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .750 | .000 | .000 | .750 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



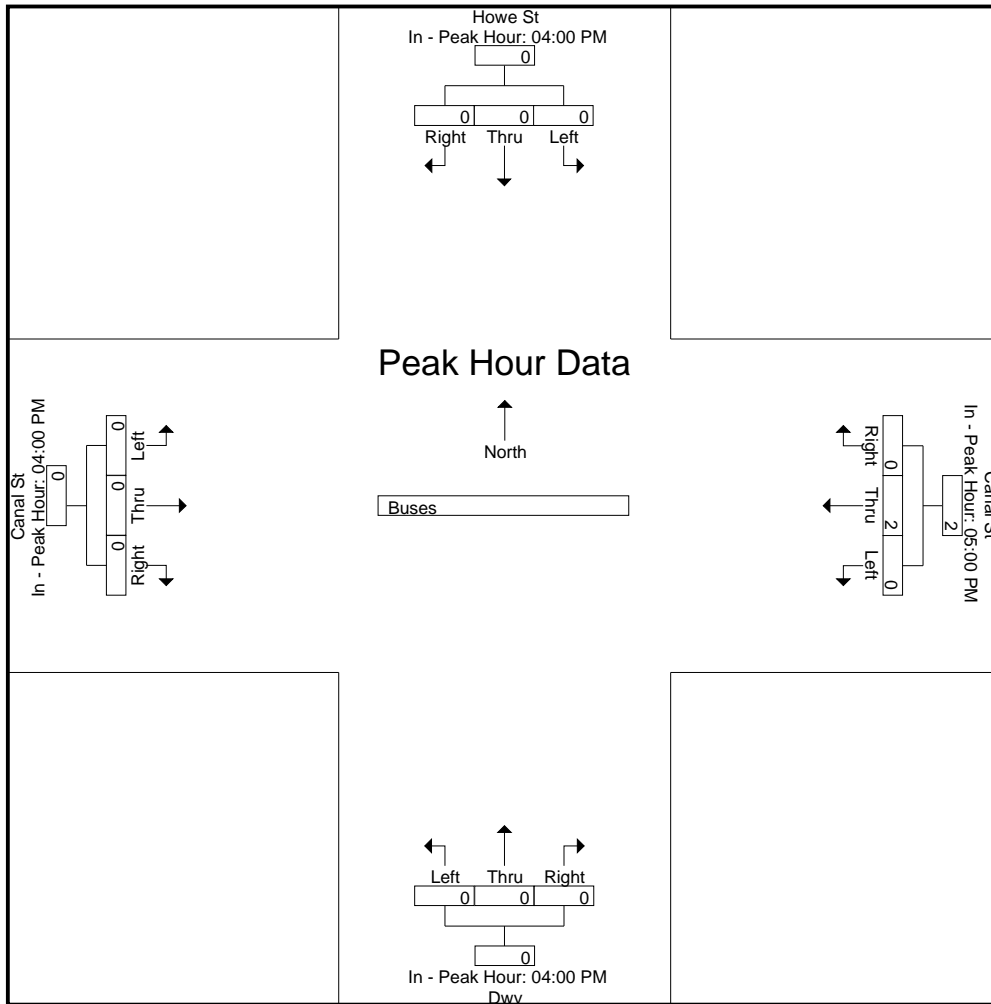
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



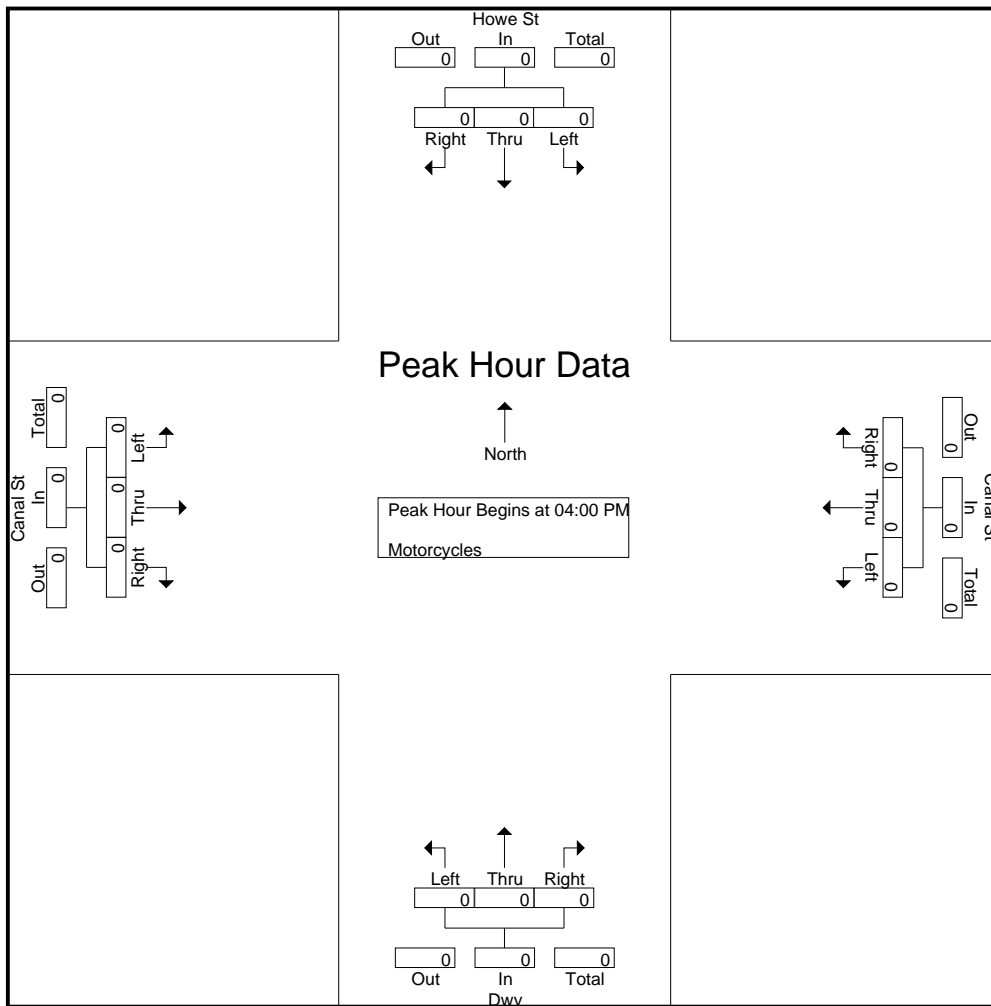
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 05:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



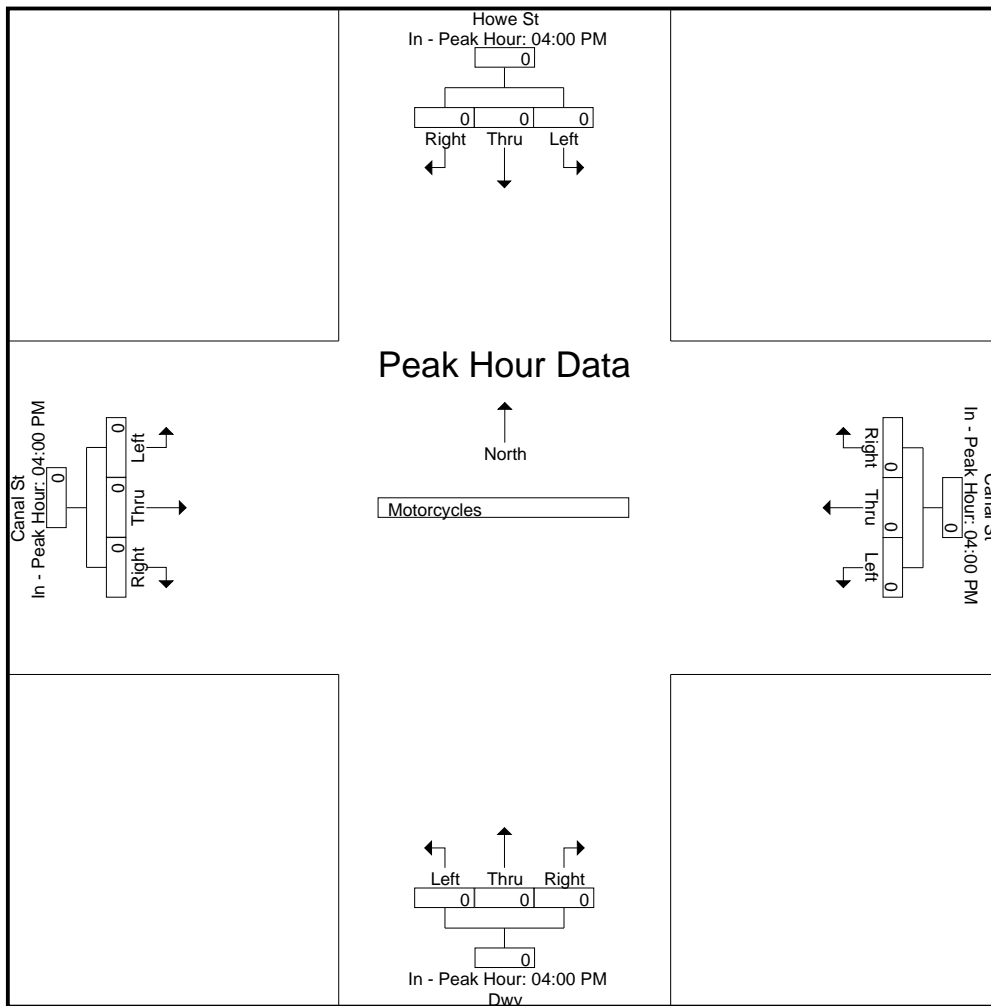
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

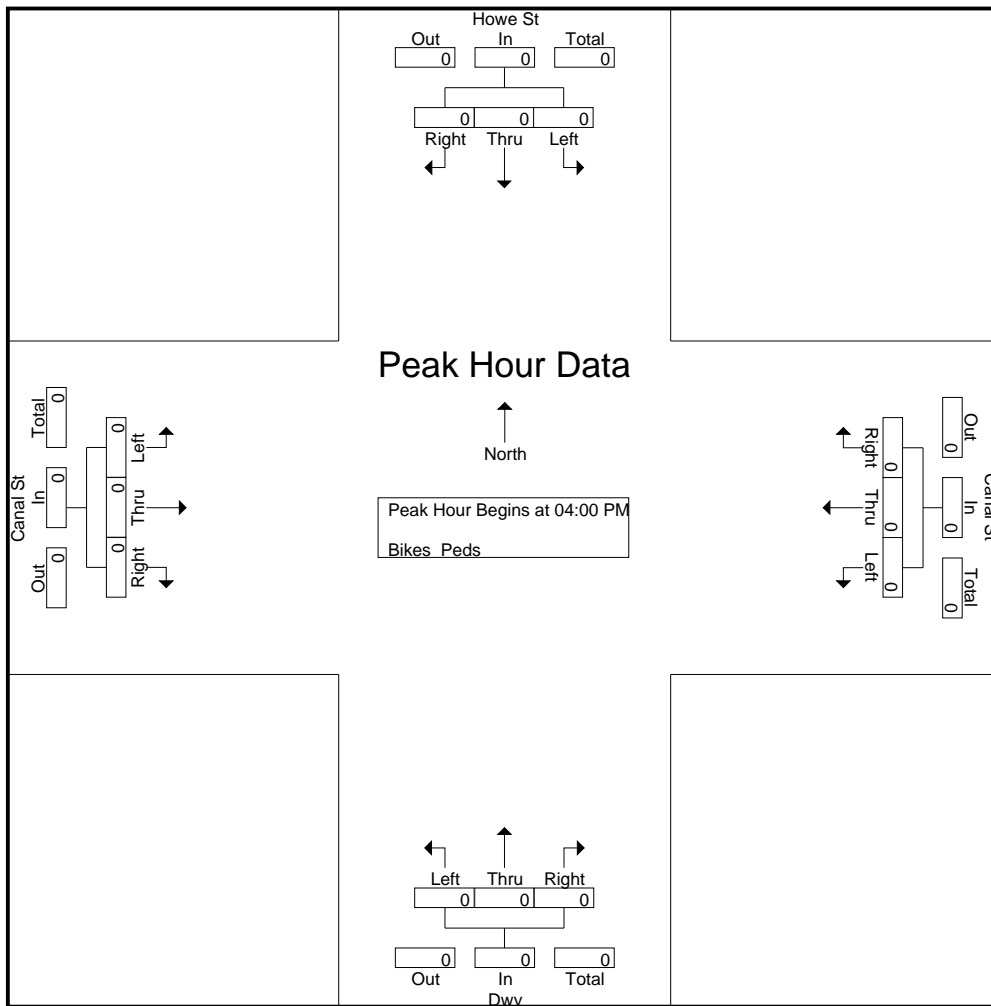
File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 1

Groups Printed- Bikes Peds

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|----------|----------|----------|--------------------|----------|----------|----------|----------------|----------|----------|----------|--------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 | 0 | 5 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 | 0 | 5 |
| Apprch % | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | | | | | | | | | | | | | | | | | 100 | 0 | |

| Start Time | Howe St From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total | |
|--|--------------------|----------|----------|------------|--------------------|----------|----------|------------|----------------|----------|----------|------------|--------------------|----------|----------|------------|------------|----------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

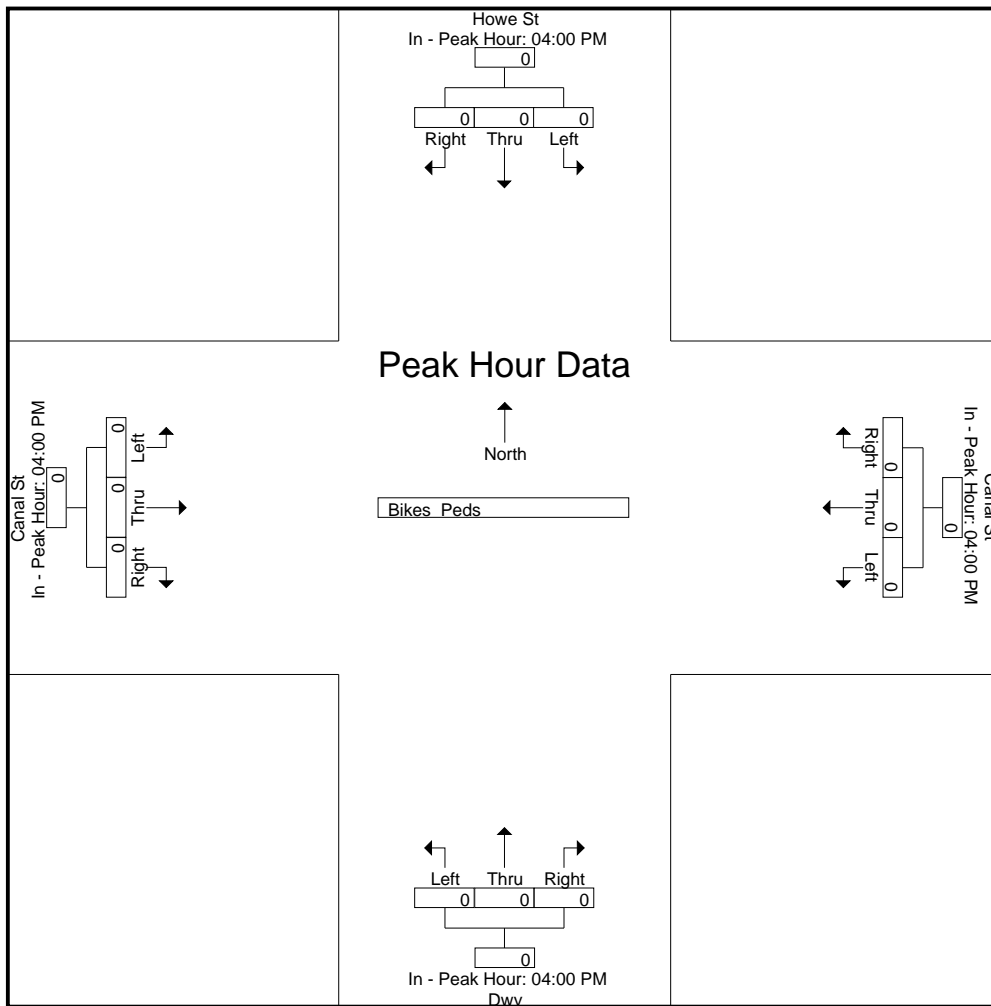
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

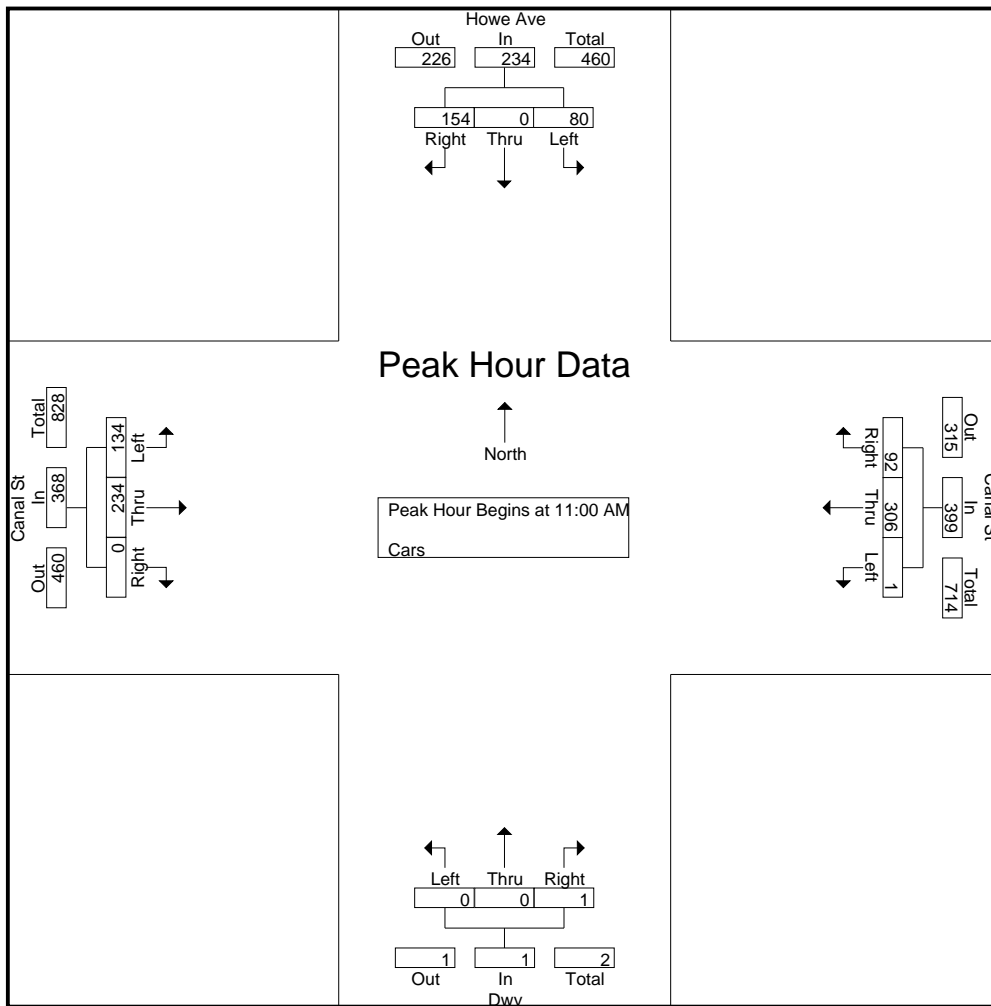
File Name : 187600S2
Site Code : 18760002
Start Date : 2/27/2021
Page No : 1

Groups Printed- Cars

| Start Time | Howe Ave From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|--------------------|---------------------|----------|------------|--------------------|------------|------------|----------------|----------|----------|--------------------|------------|----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 18 | 0 | 36 | 0 | 74 | 26 | 0 | 0 | 0 | 28 | 56 | 0 | 238 |
| 11:15 AM | 19 | 0 | 40 | 0 | 61 | 20 | 0 | 0 | 0 | 31 | 58 | 0 | 229 |
| 11:30 AM | 19 | 0 | 33 | 0 | 84 | 22 | 0 | 0 | 0 | 37 | 71 | 0 | 266 |
| 11:45 AM | 24 | 0 | 45 | 1 | 87 | 24 | 0 | 0 | 1 | 38 | 49 | 0 | 269 |
| Total | 80 | 0 | 154 | 1 | 306 | 92 | 0 | 0 | 1 | 134 | 234 | 0 | 1002 |
| 12:00 PM | 23 | 0 | 42 | 0 | 64 | 26 | 0 | 0 | 0 | 25 | 57 | 0 | 237 |
| 12:15 PM | 16 | 0 | 33 | 0 | 78 | 22 | 0 | 0 | 2 | 23 | 49 | 0 | 223 |
| 12:30 PM | 12 | 0 | 25 | 0 | 62 | 23 | 0 | 0 | 0 | 28 | 58 | 0 | 208 |
| 12:45 PM | 19 | 0 | 34 | 0 | 49 | 17 | 0 | 0 | 0 | 34 | 44 | 0 | 197 |
| Total | 70 | 0 | 134 | 0 | 253 | 88 | 0 | 0 | 2 | 110 | 208 | 0 | 865 |
| Grand Total | 150 | 0 | 288 | 1 | 559 | 180 | 0 | 0 | 3 | 244 | 442 | 0 | 1867 |
| Apprch % | 34.2 | 0 | 65.8 | 0.1 | 75.5 | 24.3 | 0 | 0 | 100 | 35.6 | 64.4 | 0 | |
| Total % | 8 | 0 | 15.4 | 0.1 | 29.9 | 9.6 | 0 | 0 | 0.2 | 13.1 | 23.7 | 0 | |

| Start Time | Howe Ave From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|---------------------|------|-----------|------------|--------------------|-----------|-----------|------------|----------------|------|----------|------------|--------------------|-----------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | | | | | | | | |
| 11:00 AM | 18 | 0 | 36 | 54 | 0 | 74 | 26 | 100 | 0 | 0 | 0 | 0 | 28 | 56 | 0 | 84 | 238 |
| 11:15 AM | 19 | 0 | 40 | 59 | 0 | 61 | 20 | 81 | 0 | 0 | 0 | 0 | 31 | 58 | 0 | 89 | 229 |
| 11:30 AM | 19 | 0 | 33 | 52 | 0 | 84 | 22 | 106 | 0 | 0 | 0 | 0 | 37 | 71 | 0 | 108 | 266 |
| 11:45 AM | 24 | 0 | 45 | 69 | 1 | 87 | 24 | 112 | 0 | 0 | 1 | 1 | 38 | 49 | 0 | 87 | 269 |
| Total Volume | 80 | 0 | 154 | 234 | 1 | 306 | 92 | 399 | 0 | 0 | 1 | 1 | 134 | 234 | 0 | 368 | 1002 |
| % App. Total | 34.2 | 0 | 65.8 | | 0.3 | 76.7 | 23.1 | | 0 | 0 | 100 | | 36.4 | 63.6 | 0 | | |
| PHF | .833 | .000 | .856 | .848 | .250 | .879 | .885 | .891 | .000 | .000 | .250 | .250 | .882 | .824 | .000 | .852 | .931 |

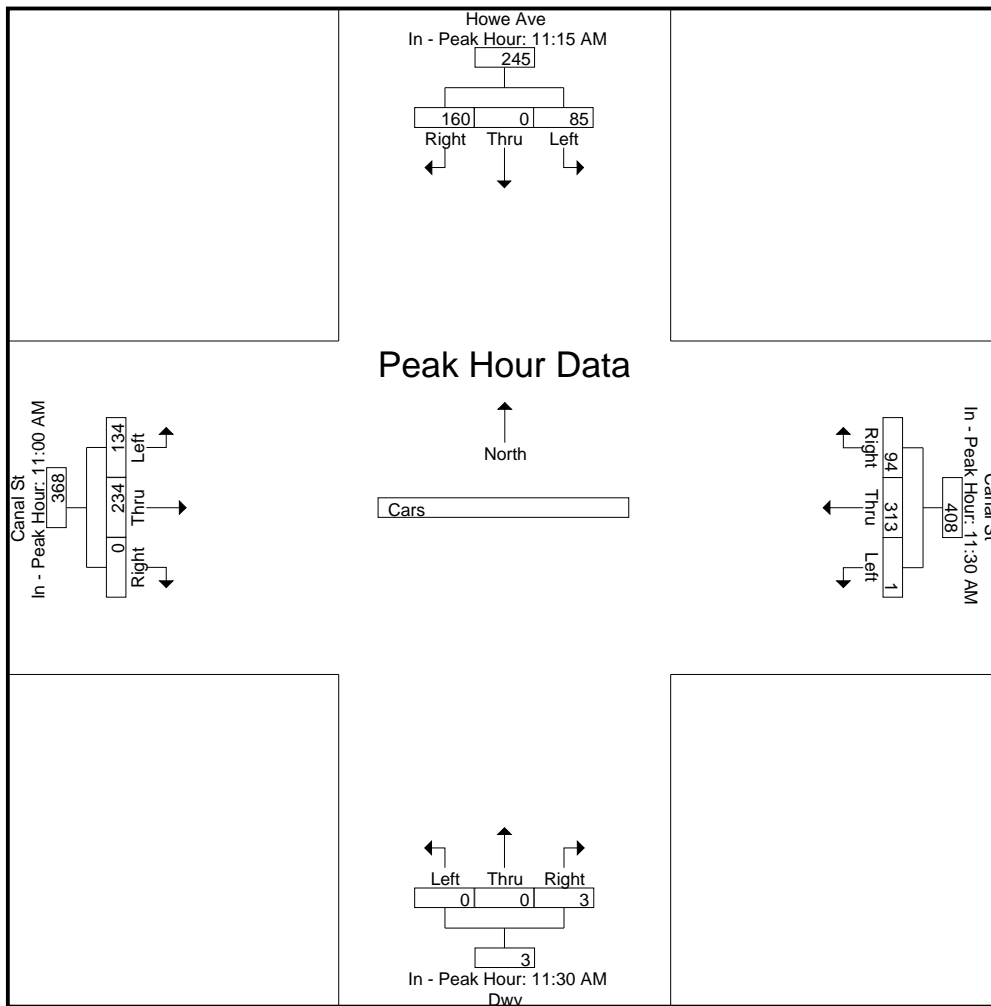
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | | 11:30 AM | | | | 11:30 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 19 | 0 | 40 | 59 | 0 | 84 | 22 | 106 | 0 | 0 | 0 | 0 | 28 | 56 | 0 | 84 |
| +15 mins. | 19 | 0 | 33 | 52 | 1 | 87 | 24 | 112 | 0 | 0 | 1 | 1 | 31 | 58 | 0 | 89 |
| +30 mins. | 24 | 0 | 45 | 69 | 0 | 64 | 26 | 90 | 0 | 0 | 0 | 0 | 37 | 71 | 0 | 108 |
| +45 mins. | 23 | 0 | 42 | 65 | 0 | 78 | 22 | 100 | 0 | 0 | 2 | 2 | 38 | 49 | 0 | 87 |
| Total Volume | 85 | 0 | 160 | 245 | 1 | 313 | 94 | 408 | 0 | 0 | 3 | 3 | 134 | 234 | 0 | 368 |
| % App. Total | 34.7 | 0 | 65.3 | | 0.2 | 76.7 | 23 | | 0 | 0 | 100 | | 36.4 | 63.6 | 0 | |
| PHF | .885 | .000 | .889 | .888 | .250 | .899 | .904 | .911 | .000 | .000 | .375 | .375 | .882 | .824 | .000 | .852 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S2
Site Code : 18760002
Start Date : 2/27/2021
Page No : 1

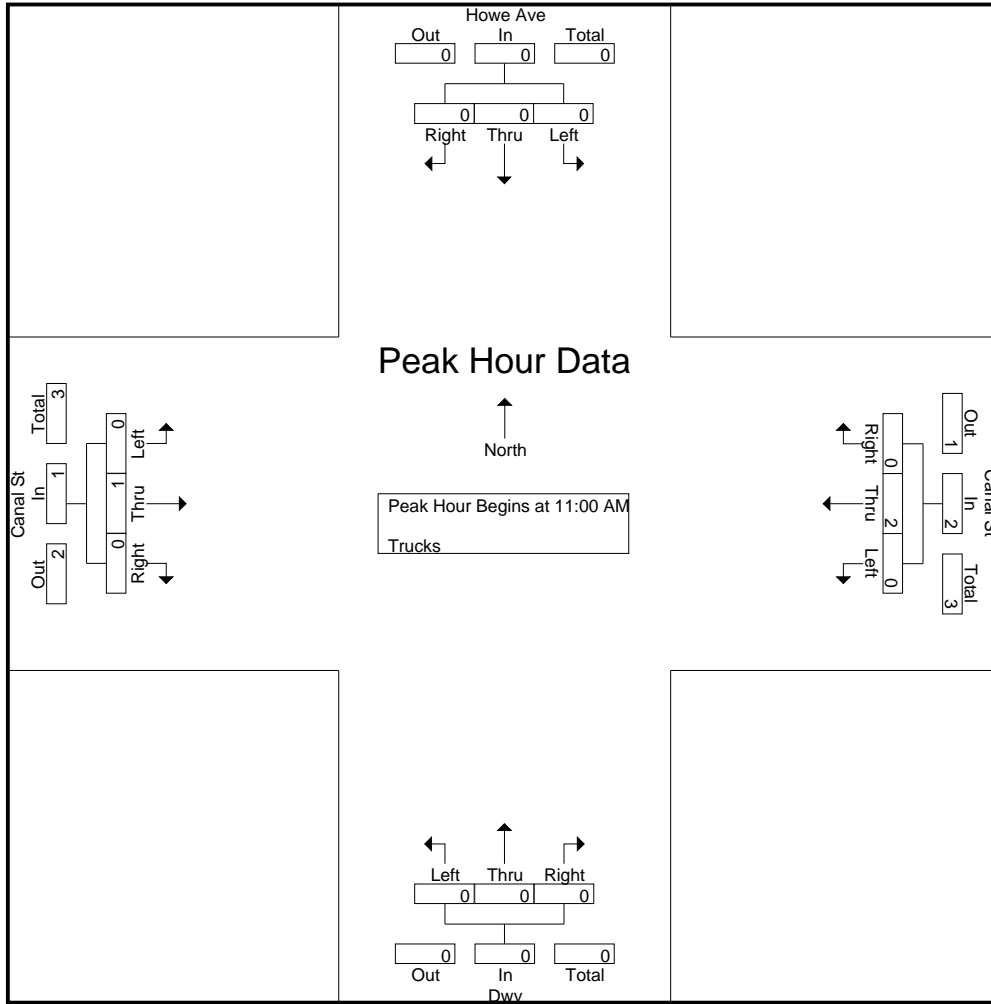
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Trucks

| Start Time | Howe Ave From North | | | Canal St From East | | | Dwy From South | | | Canal St From West | | | Int. Total |
|-------------|---------------------|------|-------|--------------------|------|-------|----------------|------|-------|--------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| 12:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 |
| Grand Total | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 6 |
| Apprch % | 0 | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 0 | 16.7 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 33.3 | 0 | |

| Start Time | Howe Ave From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|---------------------|------|-------|------------|--------------------|------|-------|------------|----------------|------|-------|------------|--------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 25 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .750 |

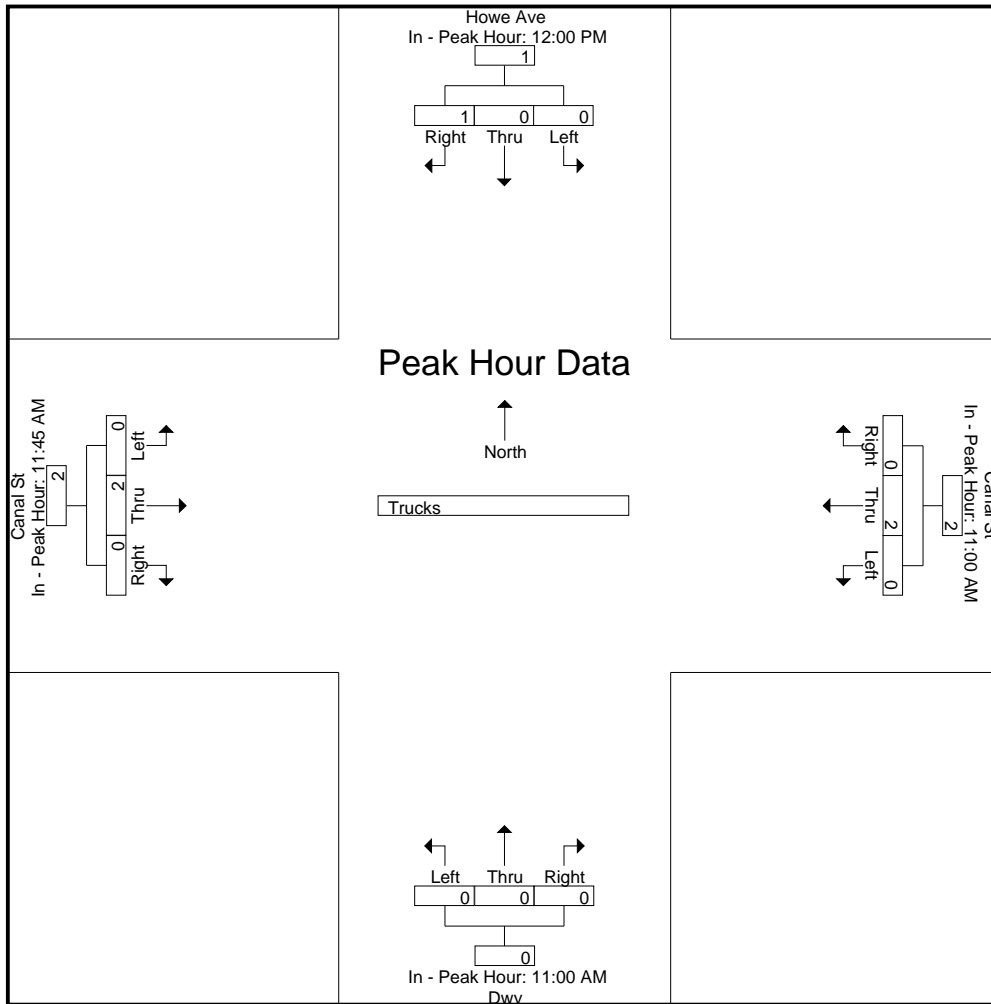
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



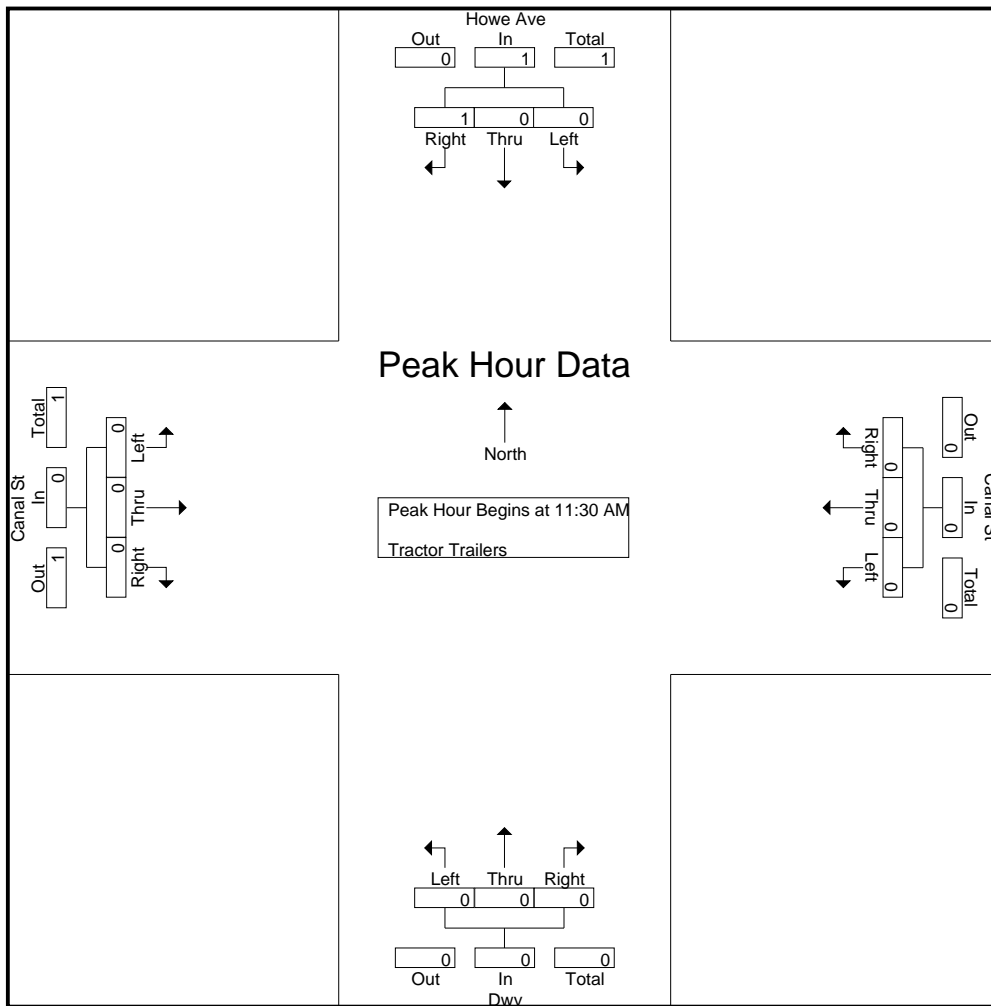
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 12:00 PM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:45 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| % App. Total | 0 | 0 | 100 | 100 | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| PHF | .000 | .000 | .250 | .250 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .500 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



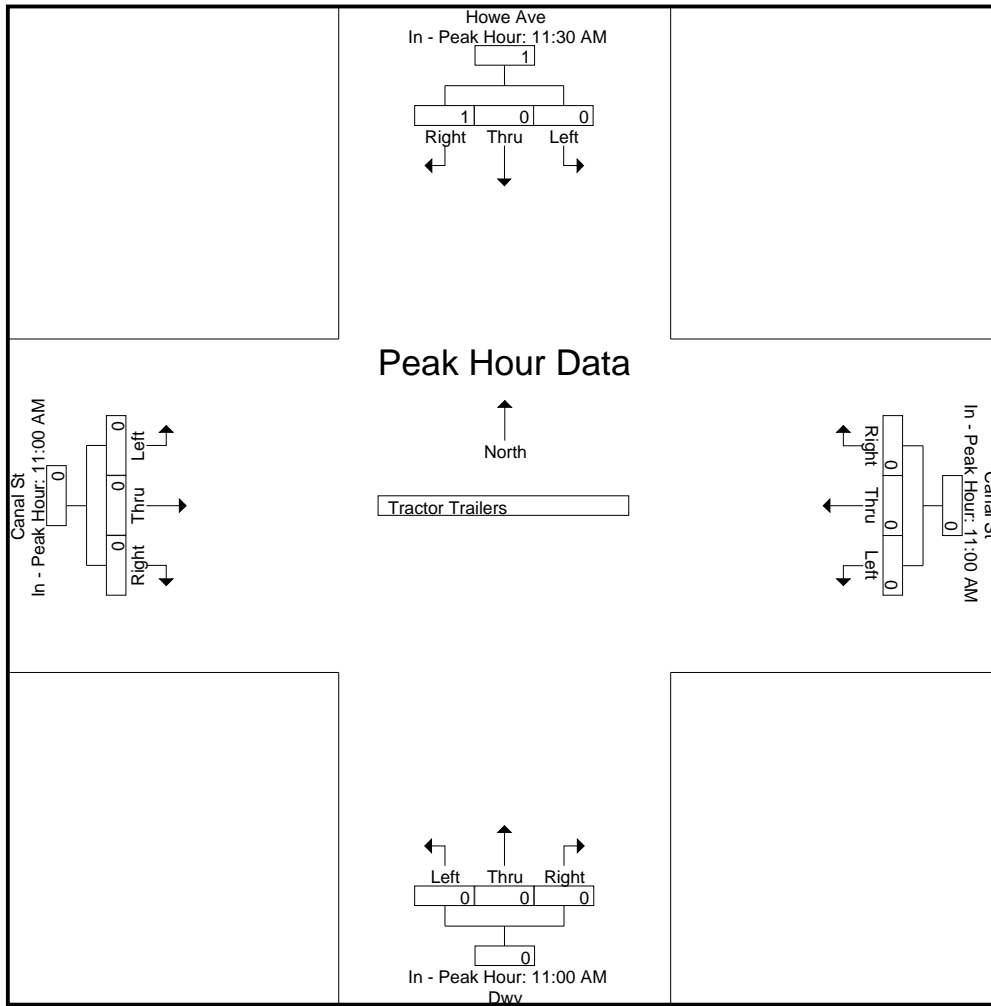
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



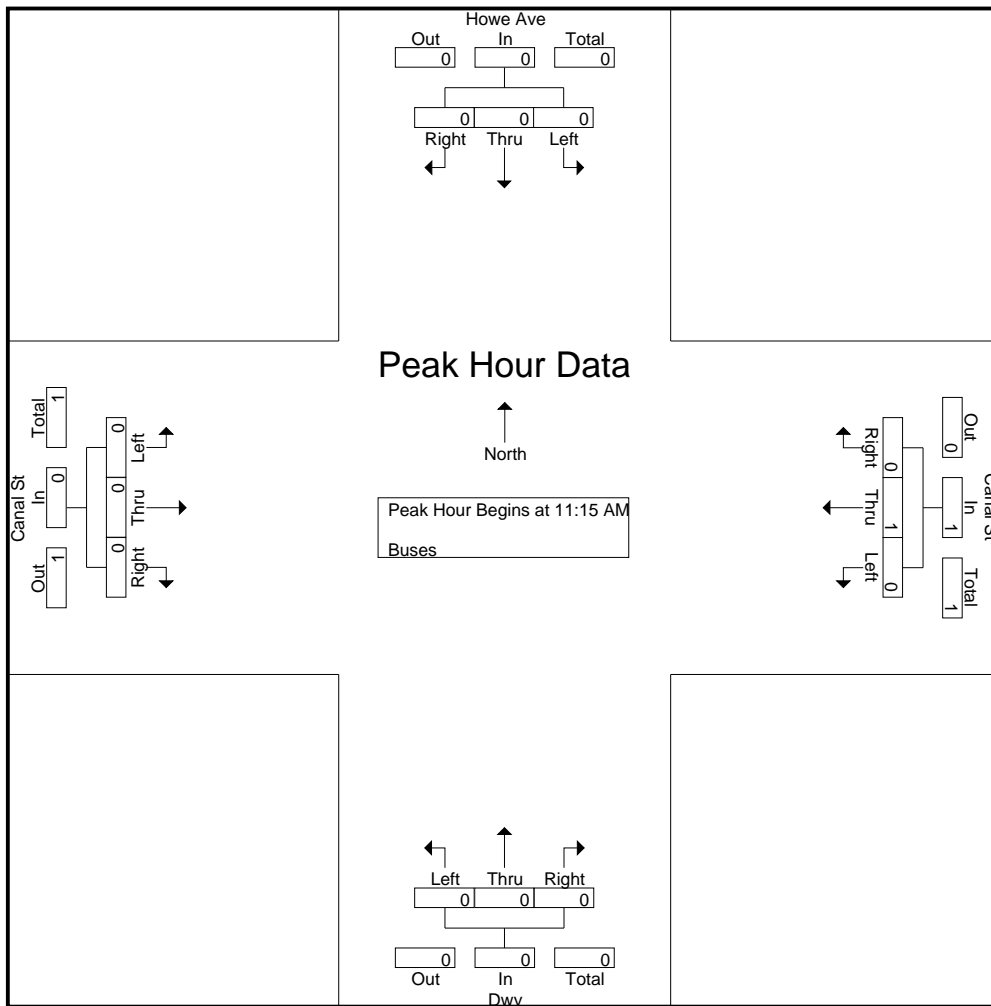
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:30 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PHF | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



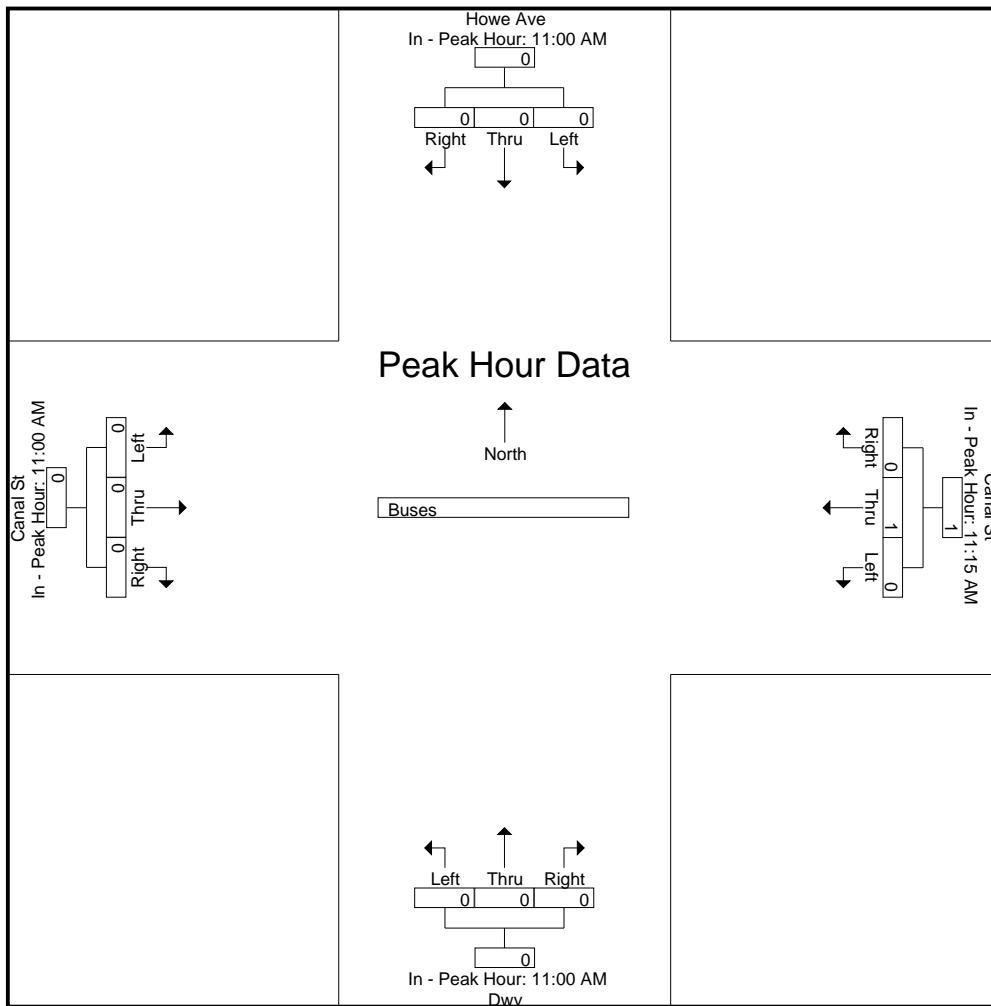
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



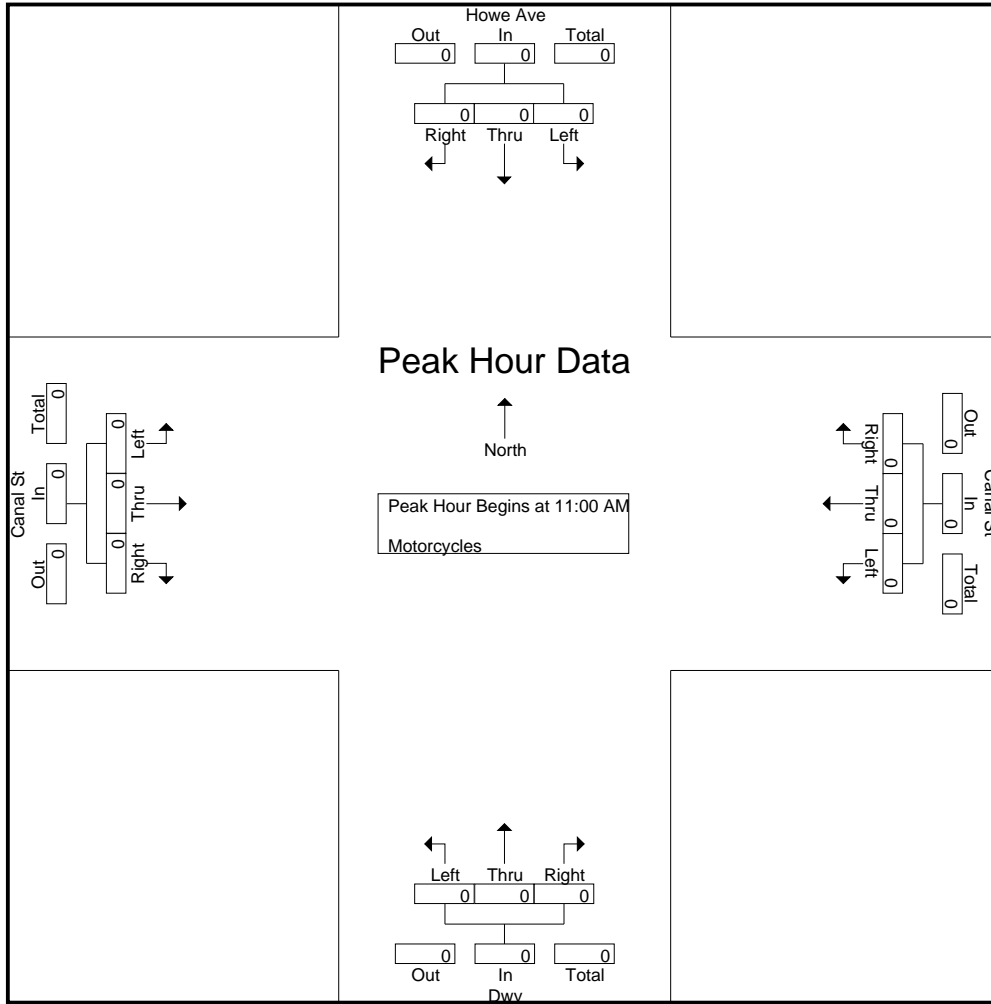
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:15 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



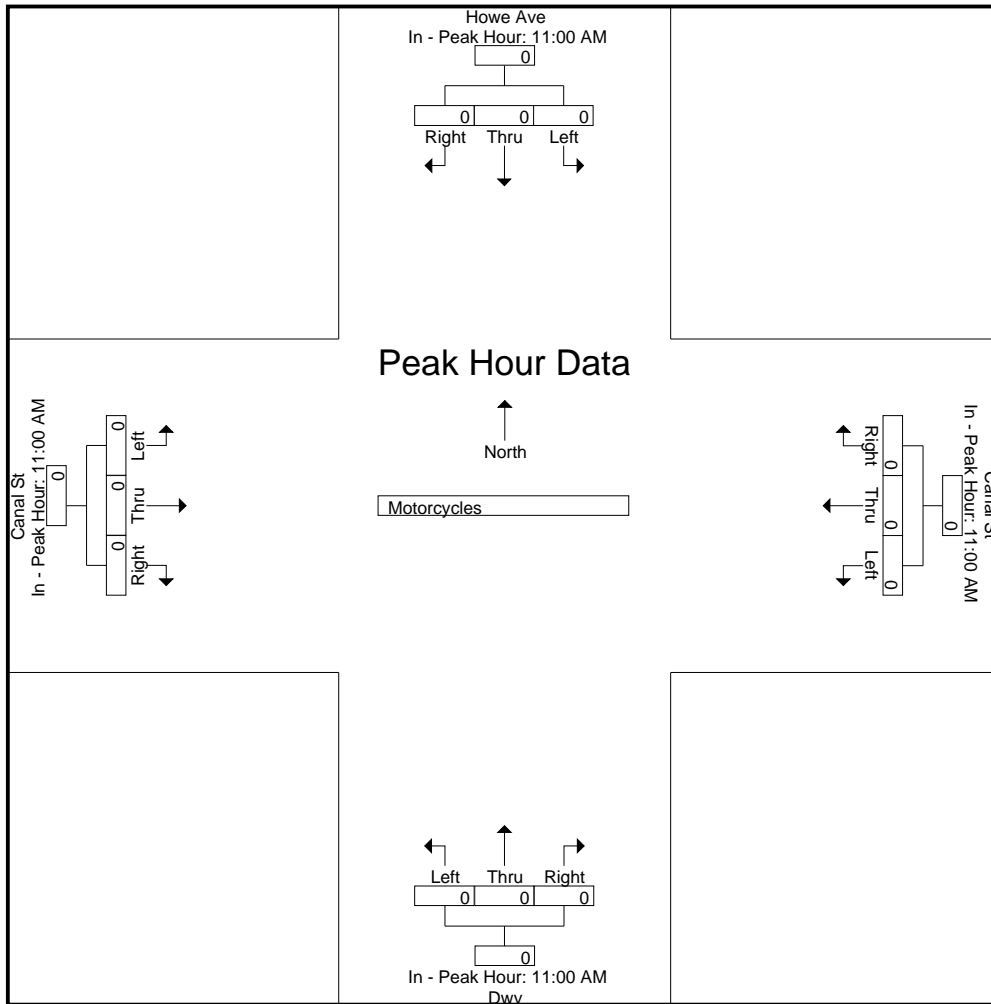
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S2
Site Code : 18760002
Start Date : 2/27/2021
Page No : 1

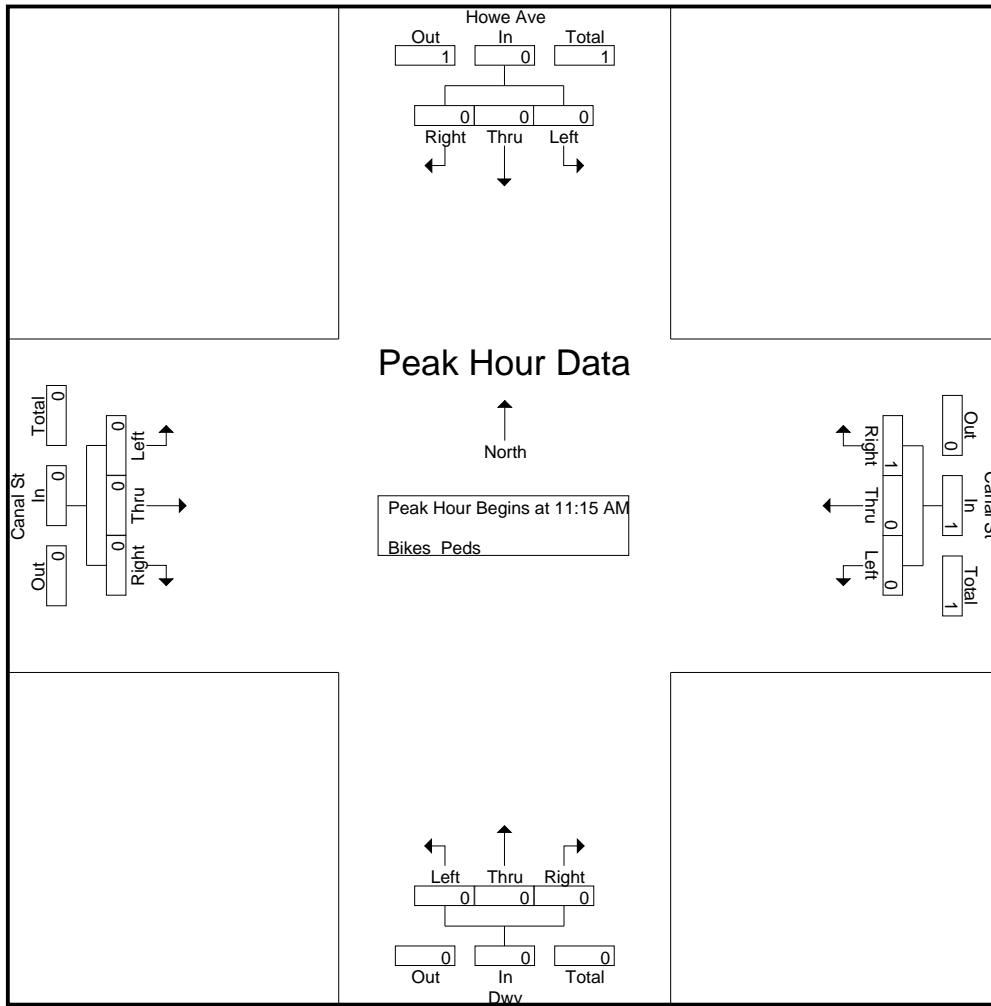
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Bikes Peds

| Start Time | Howe Ave From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|---------------------|----------|----------|----------|--------------------|----------|----------|----------|----------------|----------|----------|----------|--------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 12:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 1 | 4 |
| Grand Total | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 | 1 | 5 |
| Apprch % | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 80 | 20 | |

| Start Time | Howe Ave From North | | | | Canal St From East | | | | Dwy From South | | | | Canal St From West | | | | Int. Total |
|--|---------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |

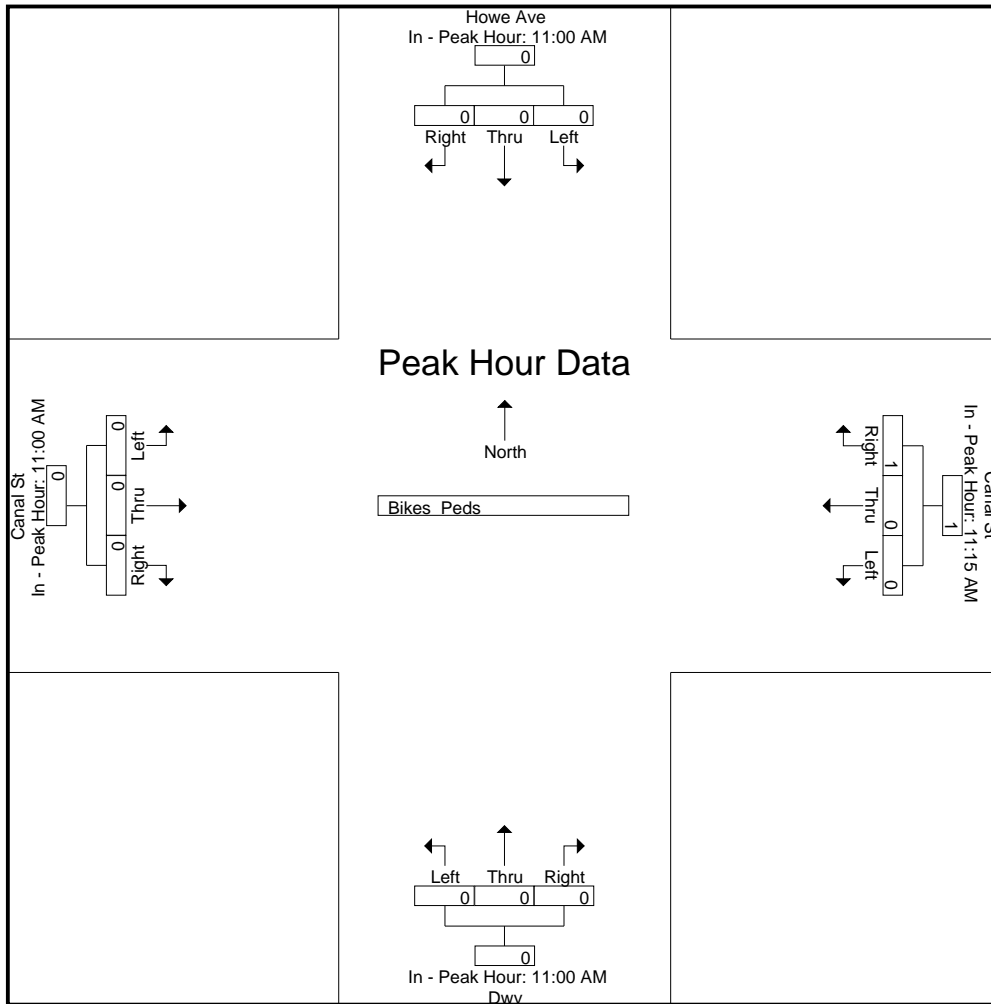
N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:15 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 1

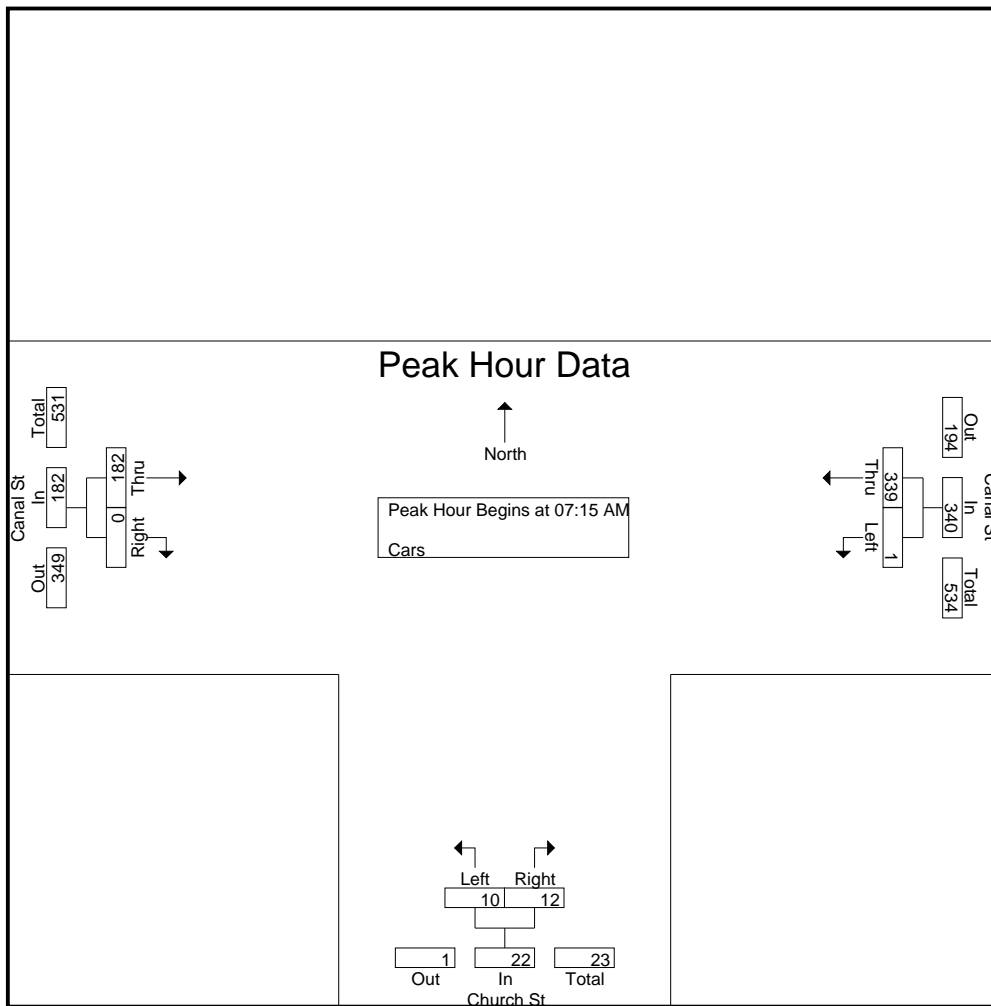
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Cars

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|--------------------|------------|----------------------|-----------|--------------------|----------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 0 | 61 | 1 | 4 | 39 | 0 | 105 |
| 07:15 AM | 0 | 95 | 2 | 2 | 41 | 0 | 140 |
| 07:30 AM | 0 | 94 | 3 | 5 | 53 | 0 | 155 |
| 07:45 AM | 0 | 84 | 3 | 3 | 46 | 0 | 136 |
| Total | 0 | 334 | 9 | 14 | 179 | 0 | 536 |
| 08:00 AM | 1 | 66 | 2 | 2 | 42 | 0 | 113 |
| 08:15 AM | 0 | 81 | 0 | 1 | 25 | 0 | 107 |
| 08:30 AM | 0 | 81 | 1 | 2 | 44 | 0 | 128 |
| 08:45 AM | 0 | 75 | 4 | 1 | 40 | 0 | 120 |
| Total | 1 | 303 | 7 | 6 | 151 | 0 | 468 |
| Grand Total | 1 | 637 | 16 | 20 | 330 | 0 | 1004 |
| Apprch % | 0.2 | 99.8 | 44.4 | 55.6 | 100 | 0 | |
| Total % | 0.1 | 63.4 | 1.6 | 2 | 32.9 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|-------------|-------------|----------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | |
| 07:15 AM | 0 | 95 | 95 | 2 | 2 | 4 | 41 | 0 | 41 | 140 |
| 07:30 AM | 0 | 94 | 94 | 3 | 5 | 8 | 53 | 0 | 53 | 155 |
| 07:45 AM | 0 | 84 | 84 | 3 | 3 | 6 | 46 | 0 | 46 | 136 |
| 08:00 AM | 1 | 66 | 67 | 2 | 2 | 4 | 42 | 0 | 42 | 113 |
| Total Volume | 1 | 339 | 340 | 10 | 12 | 22 | 182 | 0 | 182 | 544 |
| % App. Total | 0.3 | 99.7 | | 45.5 | 54.5 | | 100 | 0 | | |
| PHF | .250 | .892 | .895 | .833 | .600 | .688 | .858 | .000 | .858 | .877 |

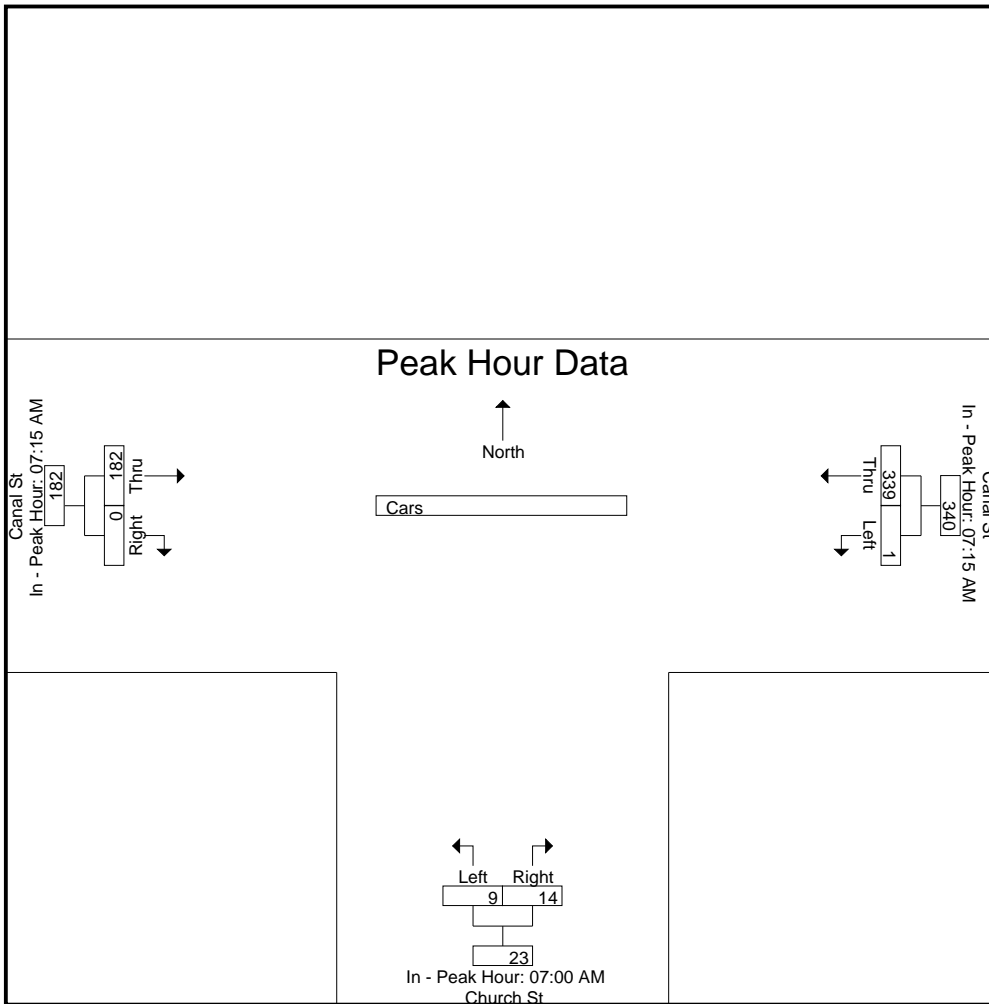
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | 07:00 AM | | | 07:15 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 95 | 95 | 1 | 4 | 5 | 41 | 0 | 41 |
| +15 mins. | 0 | 94 | 94 | 2 | 2 | 4 | 53 | 0 | 53 |
| +30 mins. | 0 | 84 | 84 | 3 | 5 | 8 | 46 | 0 | 46 |
| +45 mins. | 1 | 66 | 67 | 3 | 3 | 6 | 42 | 0 | 42 |
| Total Volume | 1 | 339 | 340 | 9 | 14 | 23 | 182 | 0 | 182 |
| % App. Total | 0.3 | 99.7 | | 39.1 | 60.9 | | 100 | 0 | |
| PHF | .250 | .892 | .895 | .750 | .700 | .719 | .858 | .000 | .858 |

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 1

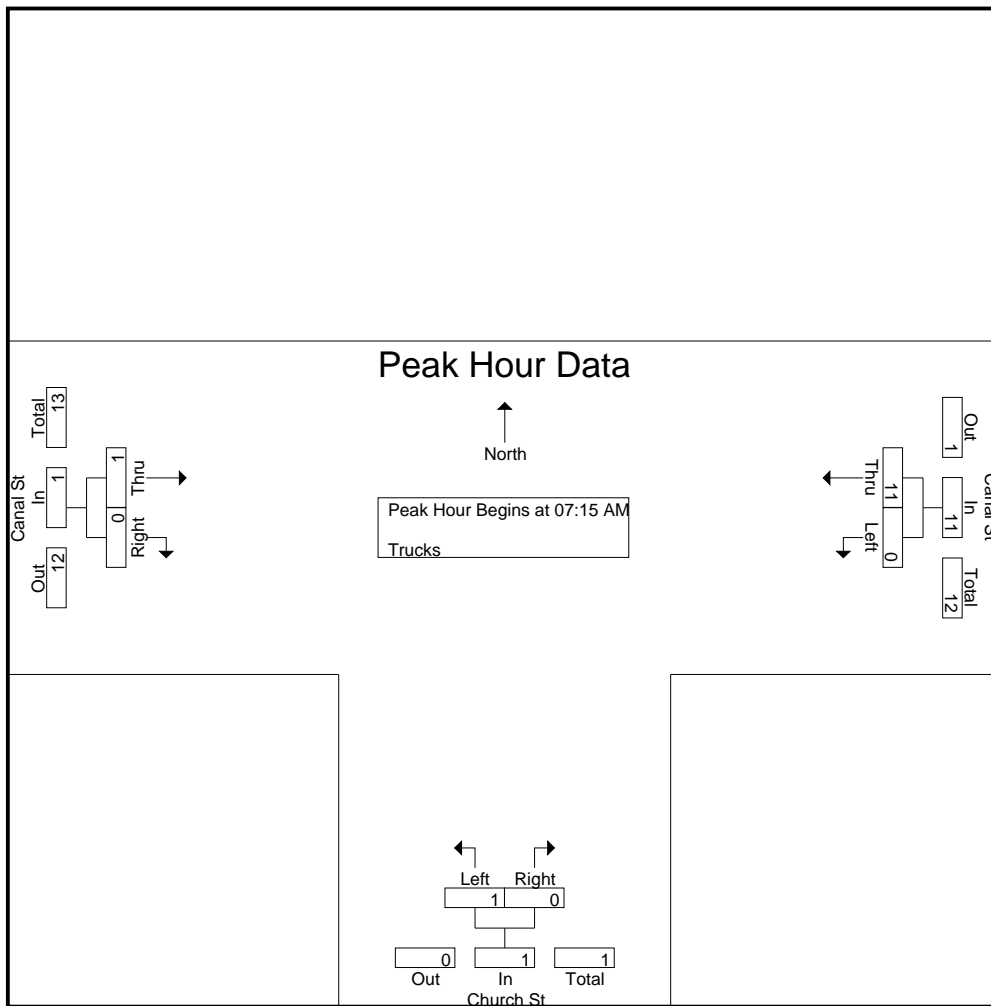
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Trucks

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|--------------------|-----------|----------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| 07:15 AM | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| 07:30 AM | 0 | 4 | 0 | 0 | 0 | 0 | 4 |
| 07:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 10 | 0 | 0 | 1 | 0 | 11 |
| 08:00 AM | 0 | 2 | 1 | 0 | 1 | 0 | 4 |
| 08:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 3 | 0 | 0 | 2 | 0 | 5 |
| 08:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 8 | 1 | 0 | 3 | 0 | 12 |
| Grand Total | 0 | 18 | 1 | 0 | 4 | 0 | 23 |
| Apprch % | 0 | 100 | 100 | 0 | 100 | 0 | |
| Total % | 0 | 78.3 | 4.3 | 0 | 17.4 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|------------|------------|----------------------|----------|------------|--------------------|----------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | |
| 07:15 AM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 07:30 AM | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:45 AM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 08:00 AM | 0 | 2 | 2 | 1 | 0 | 1 | 1 | 0 | 1 | 4 |
| Total Volume | 0 | 11 | 11 | 1 | 0 | 1 | 1 | 0 | 1 | 13 |
| % App. Total | 0 | 100 | | 100 | 0 | | 100 | 0 | | |
| PHF | .000 | .688 | .688 | .250 | .000 | .250 | .250 | .000 | .250 | .813 |

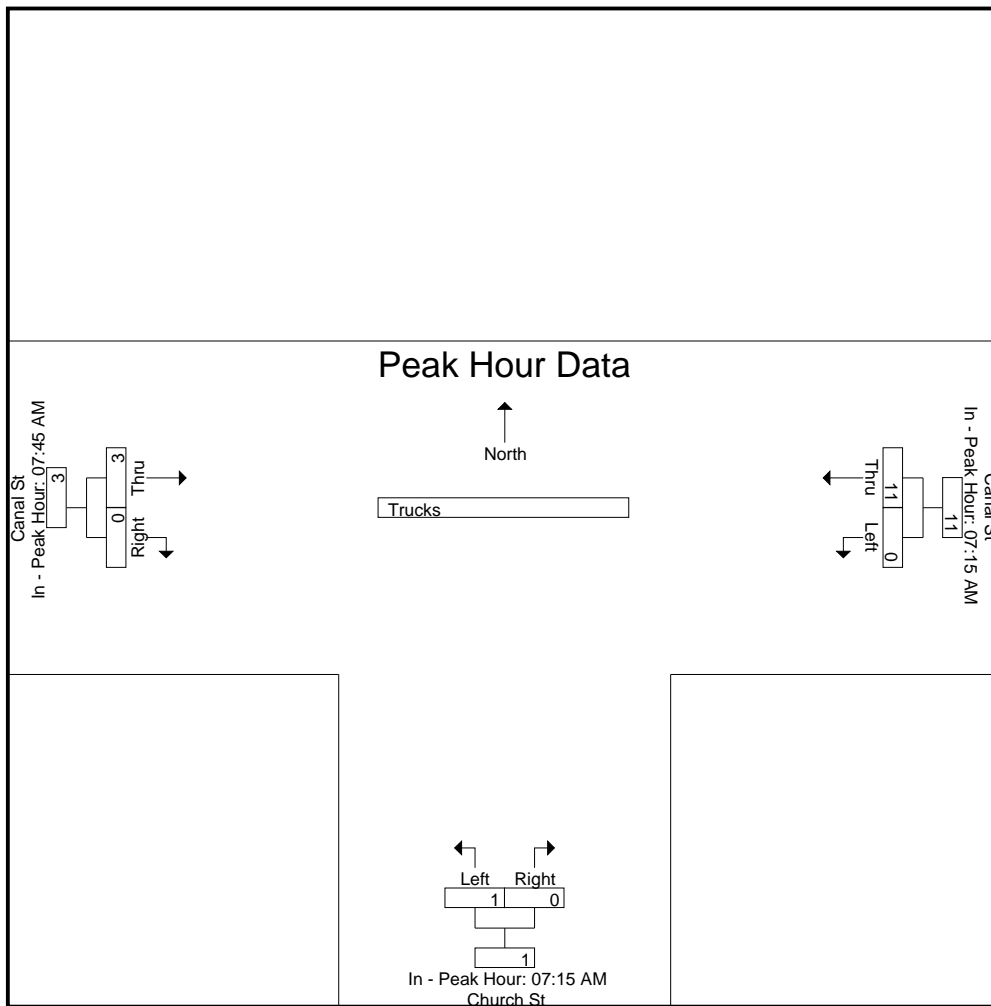
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | 07:15 AM | | | 07:45 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 4 | 4 | 0 | 0 | 0 | 1 | 0 | 1 |
| +30 mins. | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 2 | 2 | 1 | 0 | 1 | 2 | 0 | 2 |
| Total Volume | 0 | 11 | 11 | 1 | 0 | 1 | 3 | 0 | 3 |
| % App. Total | 0 | 100 | | 100 | 0 | | 100 | 0 | |
| PHF | .000 | .688 | .688 | .250 | .000 | .250 | .375 | .000 | .375 |

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 1

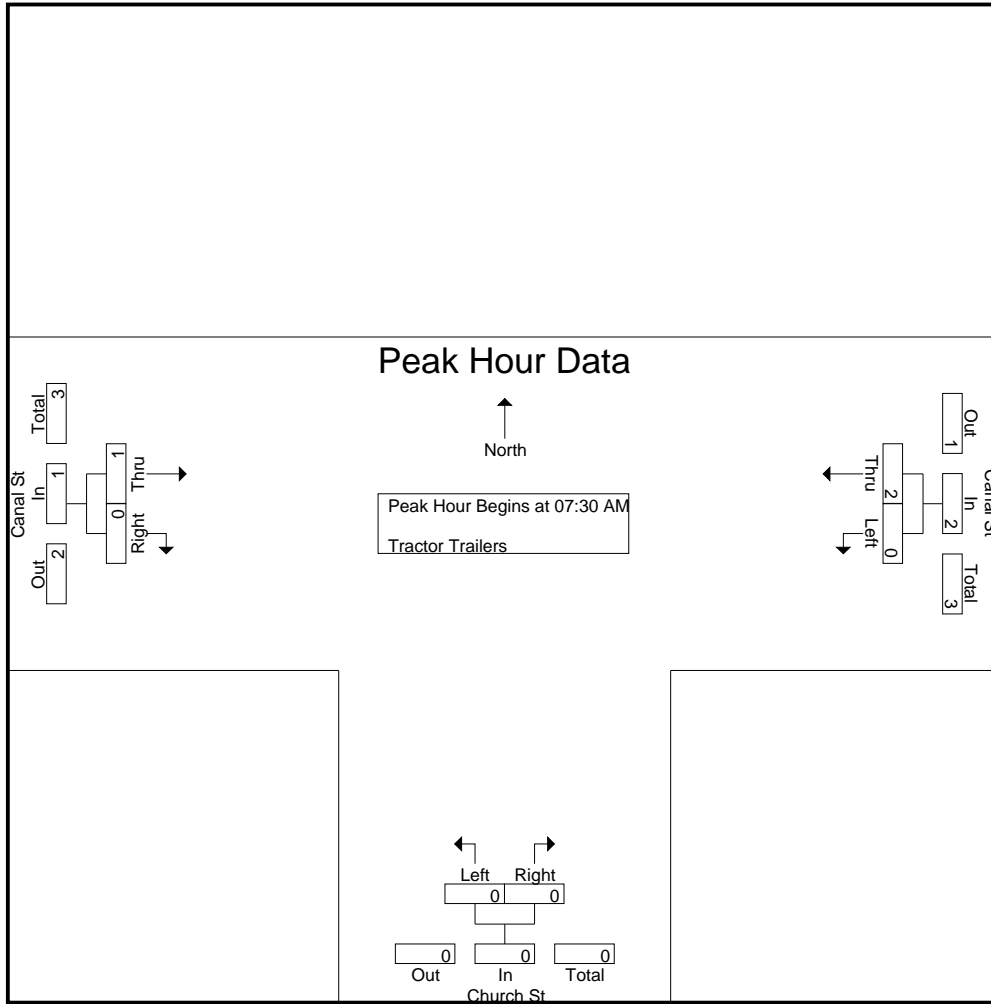
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Tractor Trailers

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|-------------|--------------------|------|----------------------|-------|--------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| Grand Total | 0 | 2 | 0 | 0 | 2 | 0 | 4 |
| Apprch % | 0 | 100 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 50 | 0 | 0 | 50 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|------|------------|----------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Total Volume | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | | |
| PHF | .000 | .500 | .500 | .000 | .000 | .000 | .250 | .000 | .250 | .375 |

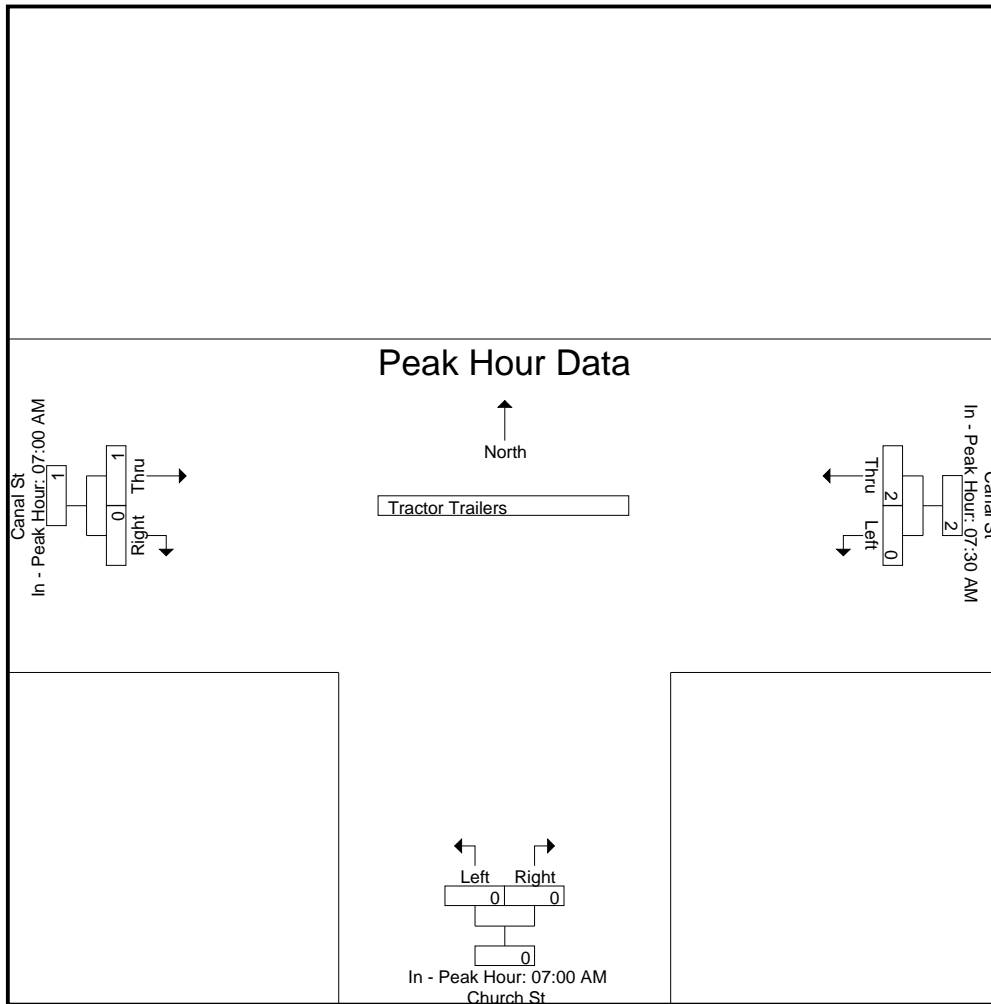
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:30 AM | | | 07:00 AM | | | 07:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | |
| PHF | .000 | .500 | .500 | .000 | .000 | .000 | .250 | .000 | .250 |

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 1

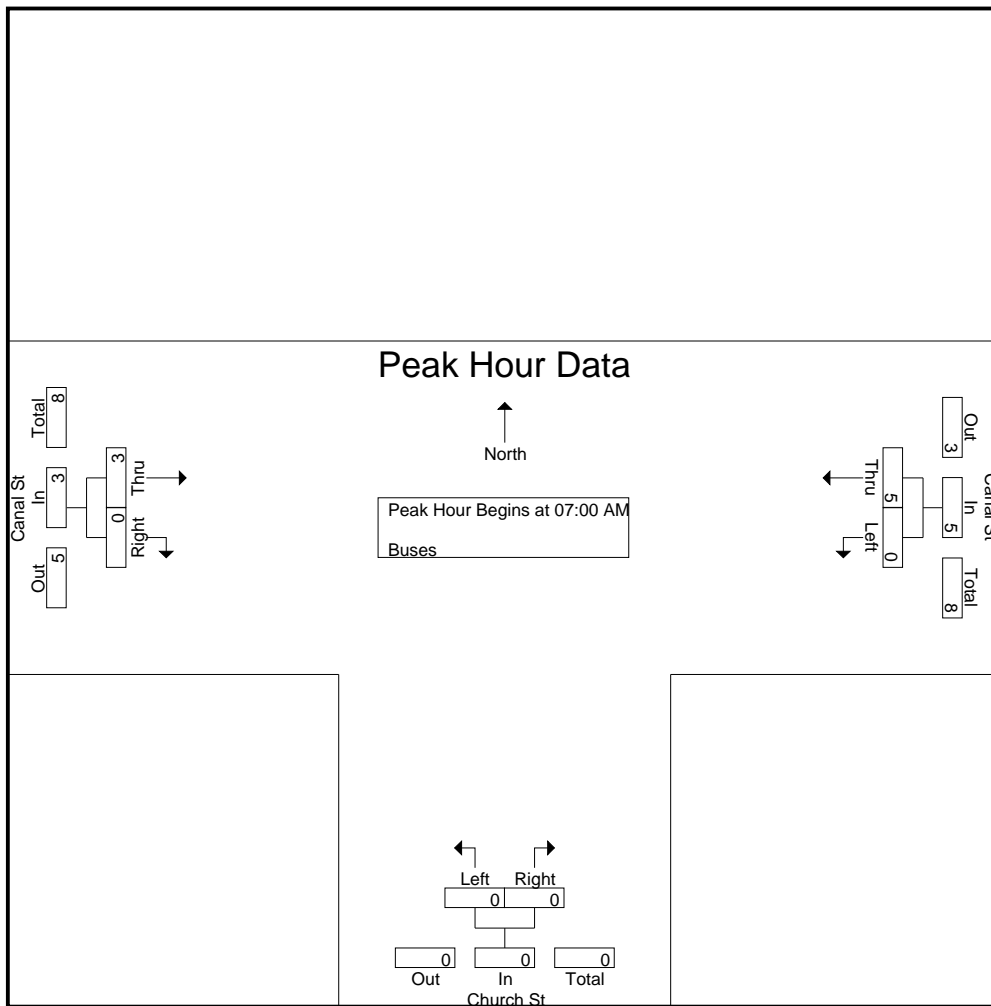
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Buses

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|--------------------|----------|----------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 0 | 4 | 0 | 0 | 1 | 0 | 5 |
| 07:15 AM | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 5 | 0 | 0 | 3 | 0 | 8 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 08:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | 0 | 8 | 0 | 0 | 3 | 0 | 11 |
| Apprch % | 0 | 100 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 72.7 | 0 | 0 | 27.3 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|-------------|-------------|----------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | |
| 07:00 AM | 0 | 4 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 5 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 5 | 5 | 0 | 0 | 0 | 3 | 0 | 3 | 8 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | | |
| PHF | .000 | .313 | .313 | .000 | .000 | .000 | .375 | .000 | .375 | .400 |

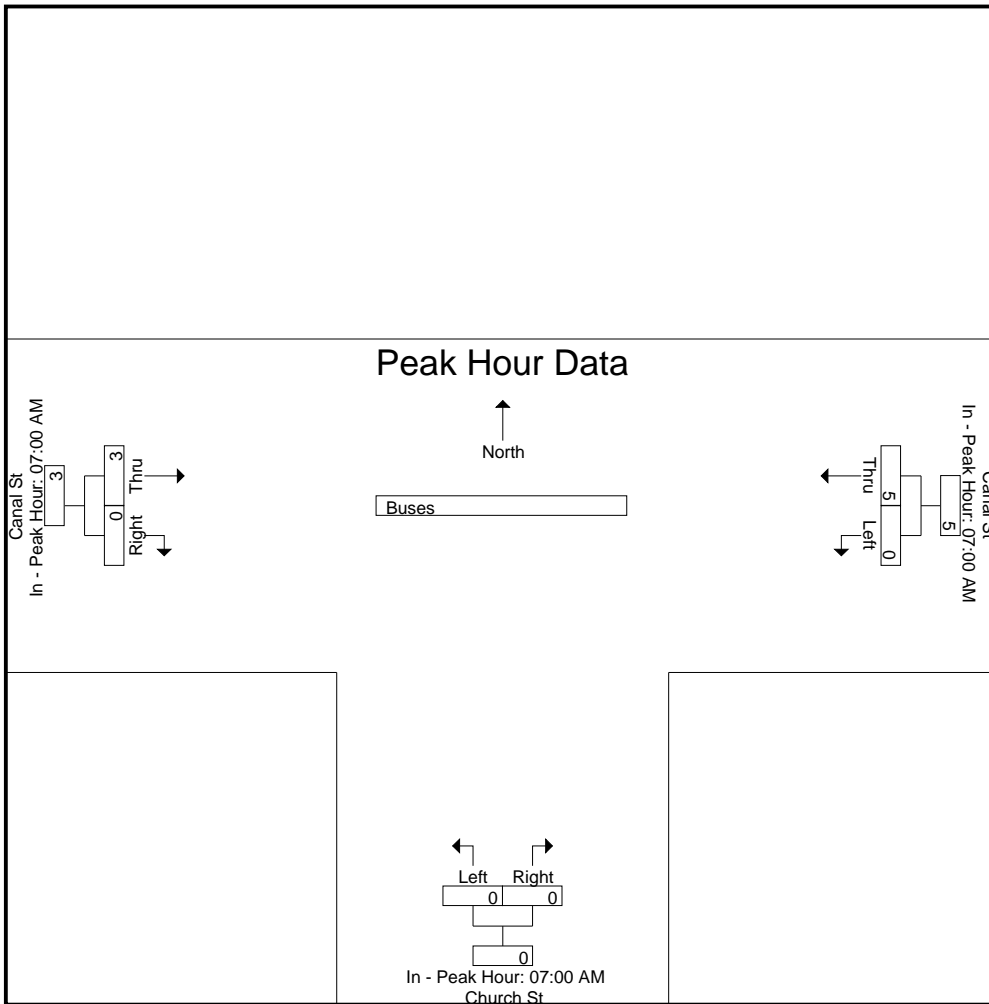
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



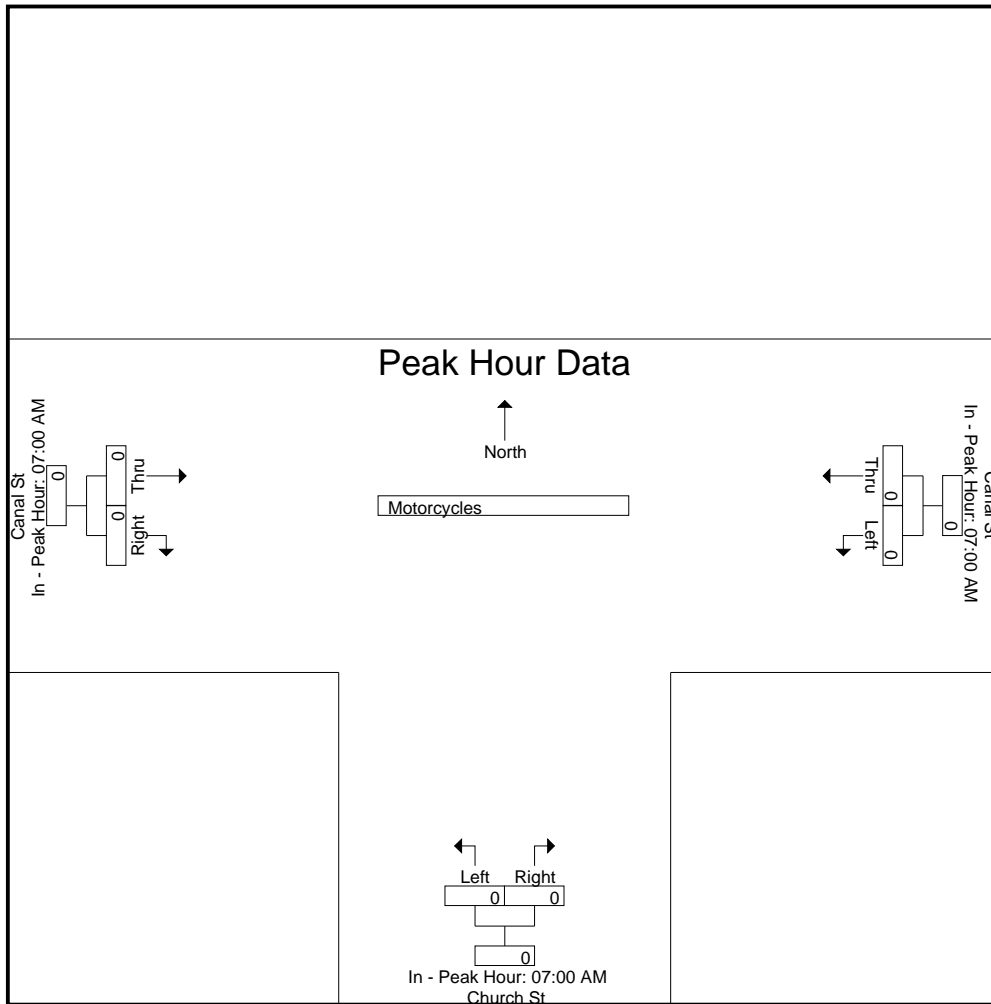
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | 07:00 AM | | | 07:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 4 | 4 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 5 | 5 | 0 | 0 | 0 | 3 | 0 | 3 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | |
| PHF | .000 | .313 | .313 | .000 | .000 | .000 | .375 | .000 | .375 |

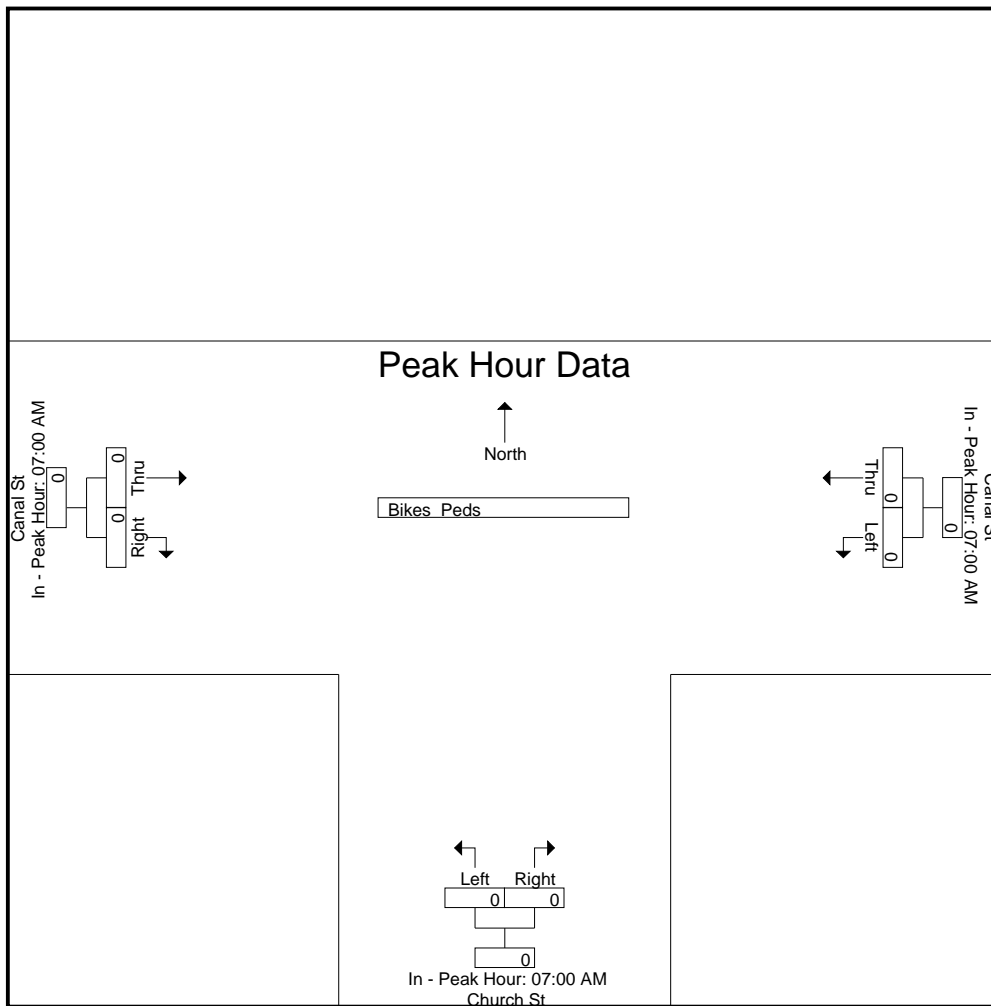
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Church Street
 E/W Street : Canal Street
 City/State : Millbury, MA
 Weather : Clear

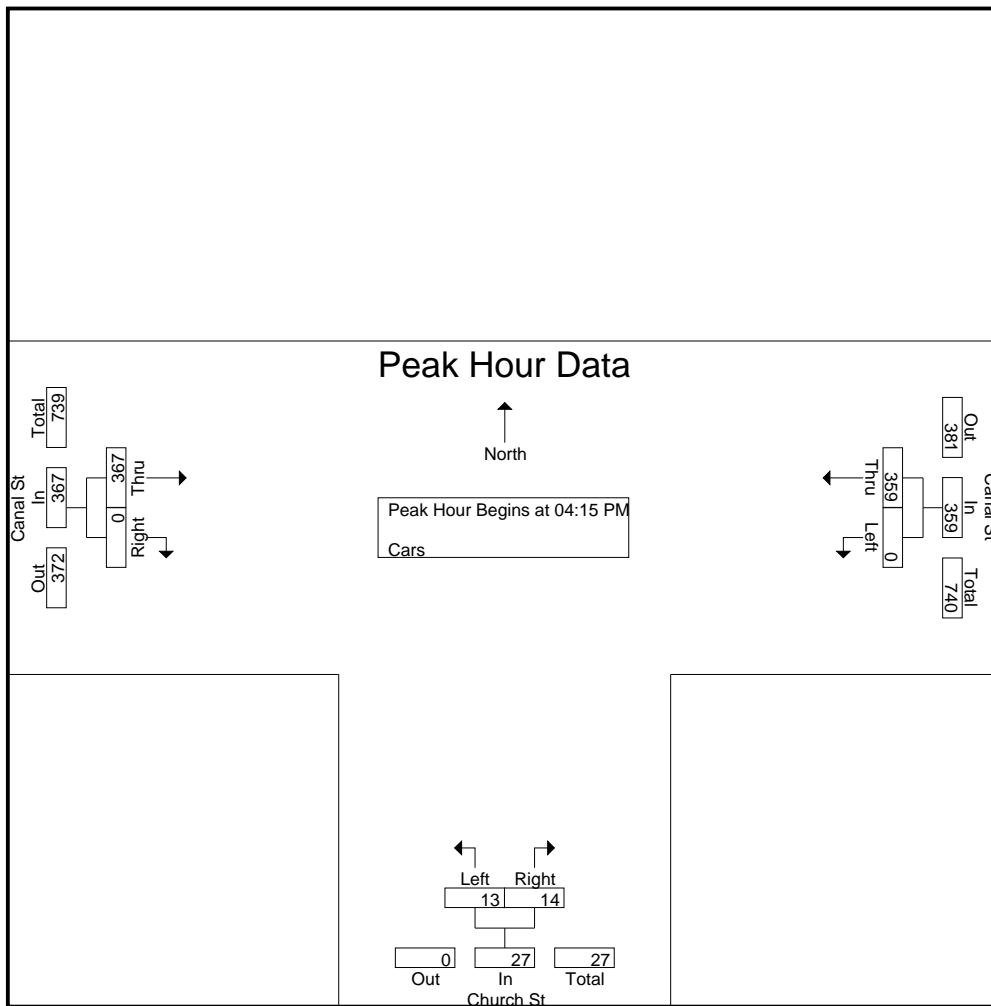
File Name : 18760003
 Site Code : 18760003
 Start Date : 2/25/2021
 Page No : 1

Groups Printed- Cars

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|--------------------|------------|----------------------|-----------|--------------------|----------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 0 | 78 | 3 | 4 | 95 | 0 | 180 |
| 04:15 PM | 0 | 88 | 4 | 4 | 76 | 0 | 172 |
| 04:30 PM | 0 | 79 | 3 | 4 | 94 | 0 | 180 |
| 04:45 PM | 0 | 86 | 3 | 4 | 92 | 0 | 185 |
| Total | 0 | 331 | 13 | 16 | 357 | 0 | 717 |
| 05:00 PM | 0 | 106 | 3 | 2 | 105 | 0 | 216 |
| 05:15 PM | 0 | 83 | 1 | 2 | 79 | 0 | 165 |
| 05:30 PM | 0 | 87 | 1 | 3 | 74 | 0 | 165 |
| 05:45 PM | 0 | 82 | 5 | 0 | 78 | 0 | 165 |
| Total | 0 | 358 | 10 | 7 | 336 | 0 | 711 |
| Grand Total | 0 | 689 | 23 | 23 | 693 | 0 | 1428 |
| Apprch % | 0 | 100 | 50 | 50 | 100 | 0 | |
| Total % | 0 | 48.2 | 1.6 | 1.6 | 48.5 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|------------|------------|----------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | |
| 04:15 PM | 0 | 88 | 88 | 4 | 4 | 8 | 76 | 0 | 76 | 172 |
| 04:30 PM | 0 | 79 | 79 | 3 | 4 | 7 | 94 | 0 | 94 | 180 |
| 04:45 PM | 0 | 86 | 86 | 3 | 4 | 7 | 92 | 0 | 92 | 185 |
| 05:00 PM | 0 | 106 | 106 | 3 | 2 | 5 | 105 | 0 | 105 | 216 |
| Total Volume | 0 | 359 | 359 | 13 | 14 | 27 | 367 | 0 | 367 | 753 |
| % App. Total | 0 | 100 | | 48.1 | 51.9 | | 100 | 0 | | |
| PHF | .000 | .847 | .847 | .813 | .875 | .844 | .874 | .000 | .874 | .872 |

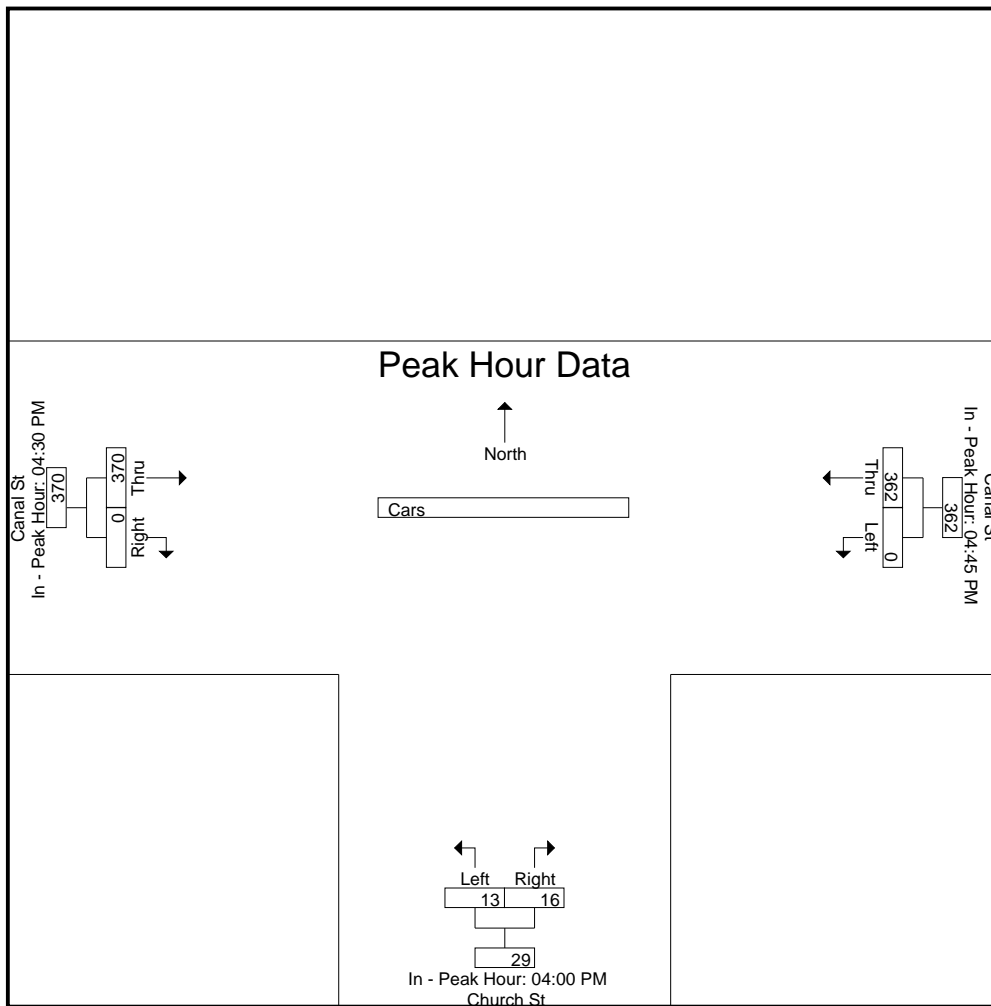
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:45 PM | | | 04:00 PM | | | 04:30 PM | | |
|--------------|----------|------------|------------|----------|-------|----------|------------|------|------------|
| +0 mins. | 0 | 86 | 86 | 3 | 4 | 7 | 94 | 0 | 94 |
| +15 mins. | 0 | 106 | 106 | 4 | 4 | 8 | 92 | 0 | 92 |
| +30 mins. | 0 | 83 | 83 | 3 | 4 | 7 | 105 | 0 | 105 |
| +45 mins. | 0 | 87 | 87 | 3 | 4 | 7 | 79 | 0 | 79 |
| Total Volume | 0 | 362 | 362 | 13 | 16 | 29 | 370 | 0 | 370 |
| % App. Total | 0 | 100 | | 44.8 | 55.2 | | 100 | 0 | |
| PHF | .000 | .854 | .854 | .813 | 1.000 | .906 | .881 | .000 | .881 |

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 1

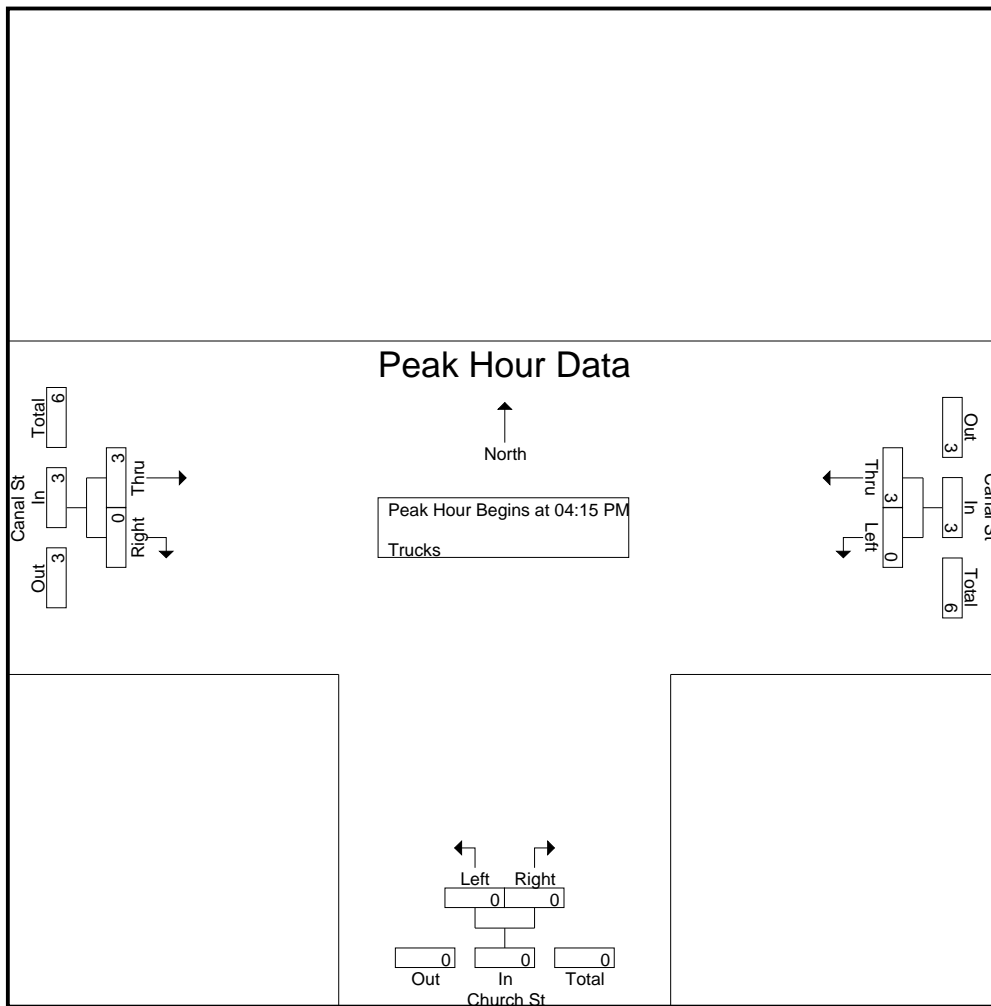
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Trucks

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|--------------------|----------|----------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 3 | 0 | 4 |
| 05:00 PM | 0 | 2 | 0 | 0 | 1 | 0 | 3 |
| 05:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 3 | 0 | 0 | 1 | 0 | 4 |
| Grand Total | 0 | 4 | 0 | 0 | 4 | 0 | 8 |
| Apprch % | 0 | 100 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 50 | 0 | 0 | 50 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|-------------|-------------|----------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 04:30 PM | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| Total Volume | 0 | 3 | 3 | 0 | 0 | 0 | 3 | 0 | 3 | 6 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | | |
| PHF | .000 | .375 | .375 | .000 | .000 | .000 | .750 | .000 | .750 | .500 |

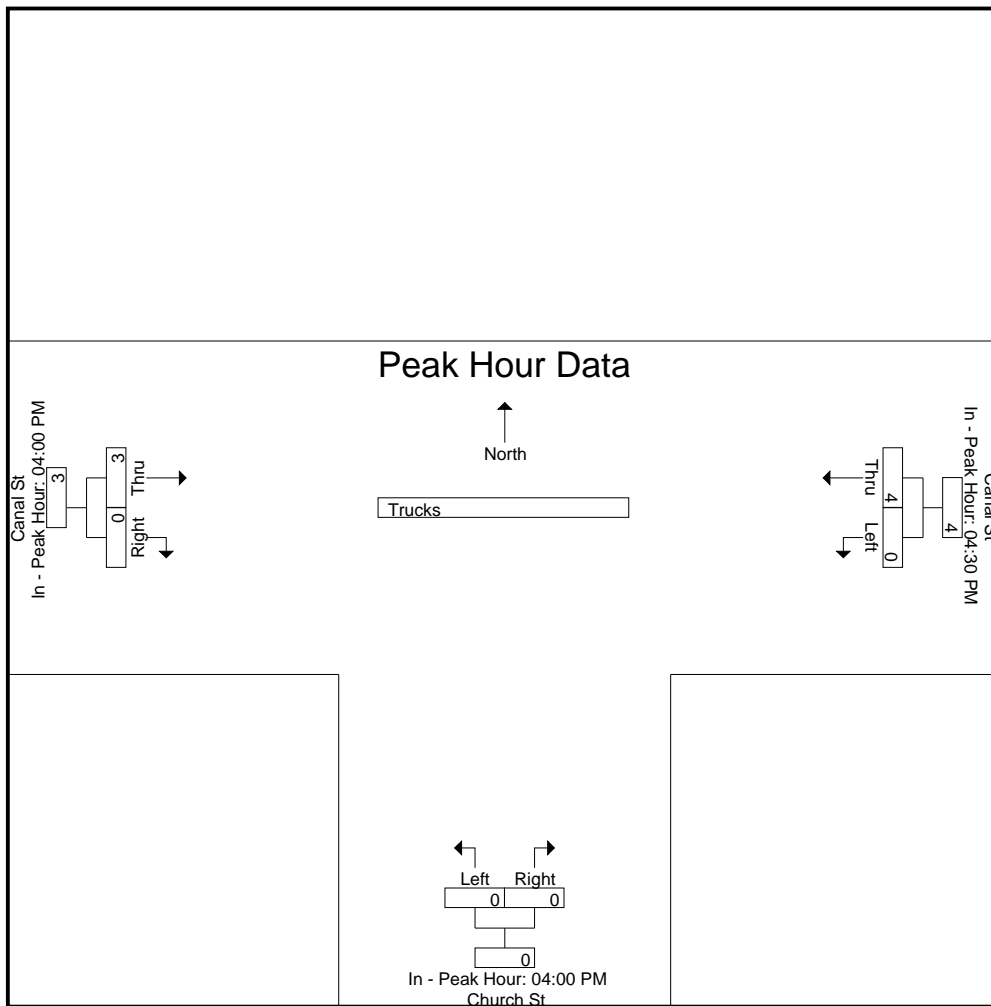
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



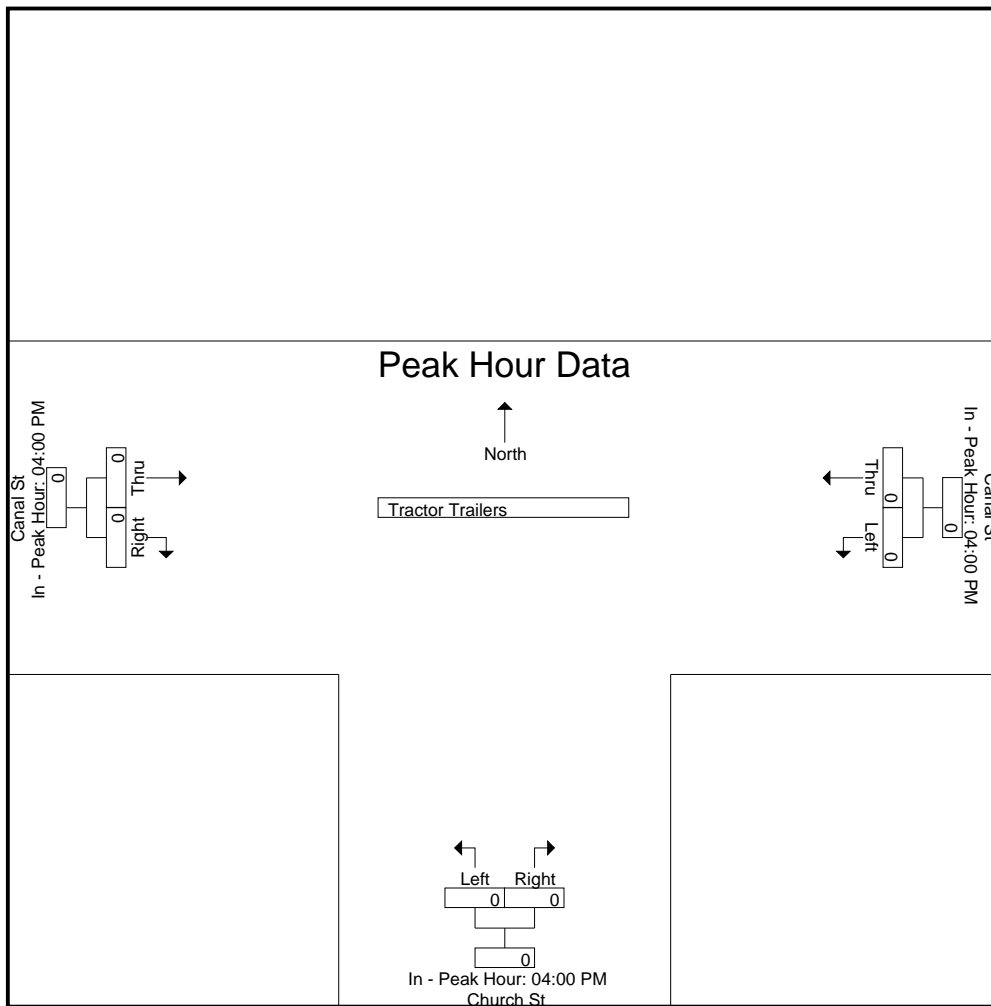
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | 04:00 PM | | | 04:00 PM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +30 mins. | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| +45 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 4 | 4 | 0 | 0 | 0 | 3 | 0 | 3 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | |
| PHF | .000 | .500 | .500 | .000 | .000 | .000 | .750 | .000 | .750 |

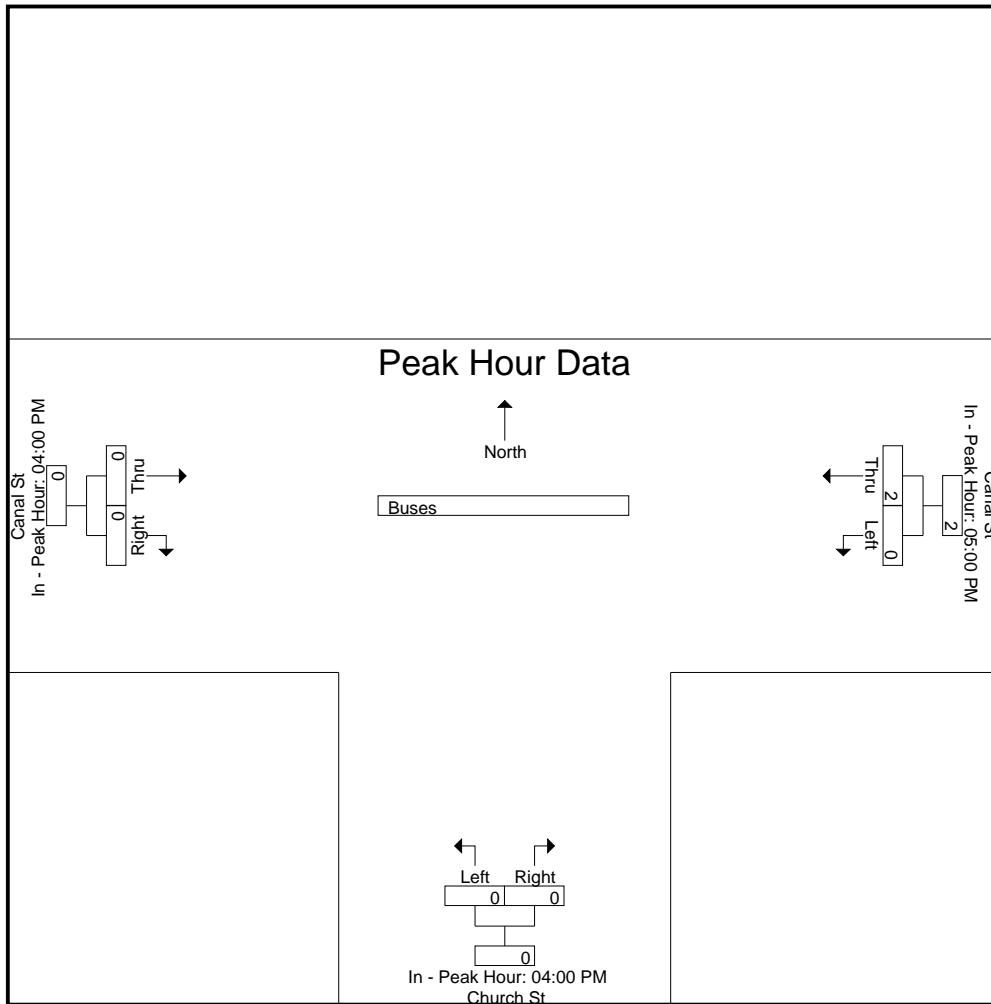
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



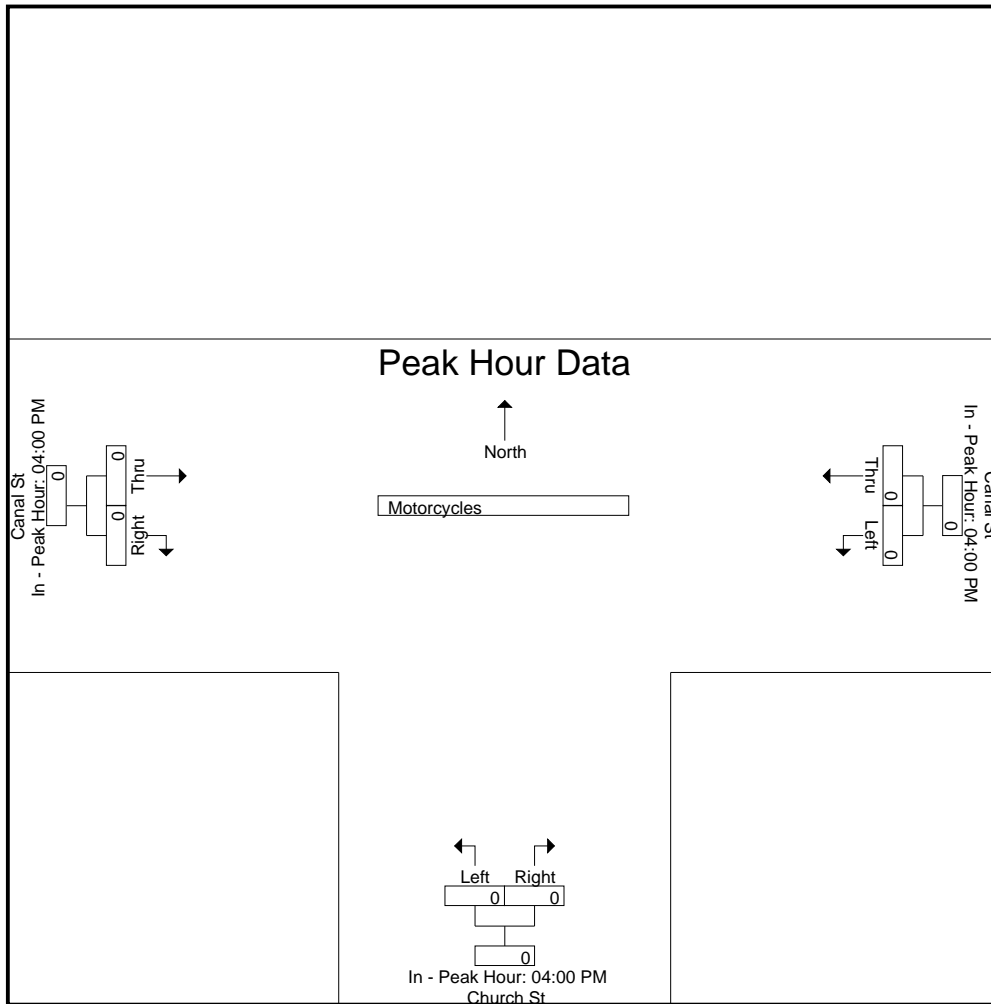
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 1

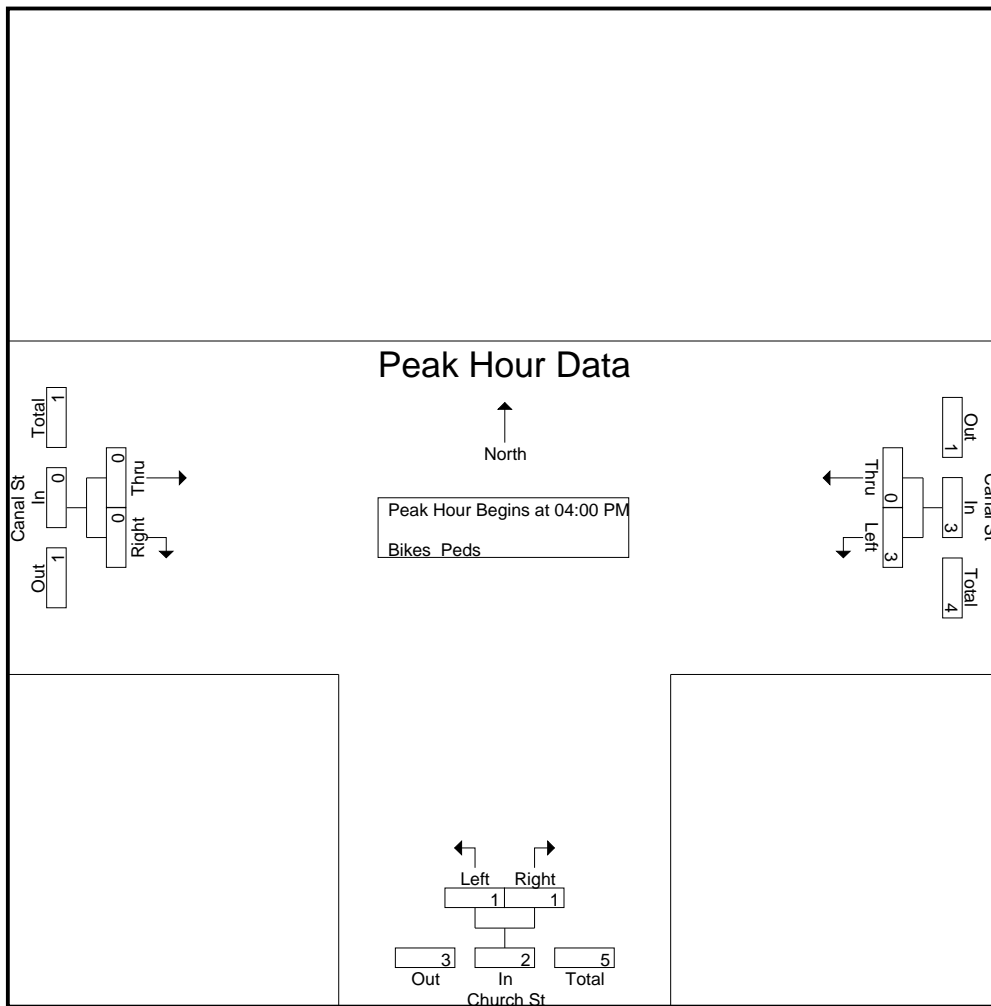
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Bikes Peds

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|----------|----------|----------------------|----------|----------|--------------------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Peds | Left | Right | Peds | Thru | Right | Peds | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 |
| 04:15 PM | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 5 | 6 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 5 | 6 |
| Apprch % | 100 | 0 | | 50 | 50 | | 0 | 0 | | | | |
| Total % | 60 | 0 | | 20 | 20 | | 0 | 0 | | 16.7 | 83.3 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|-------------|-------------|----------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 04:15 PM | 3 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 3 | 0 | 3 | 1 | 1 | 2 | 0 | 0 | 0 | 5 |
| % App. Total | 100 | 0 | | 50 | 50 | | 0 | 0 | | |
| PHF | .250 | .000 | .250 | .250 | .250 | .500 | .000 | .000 | .000 | .313 |

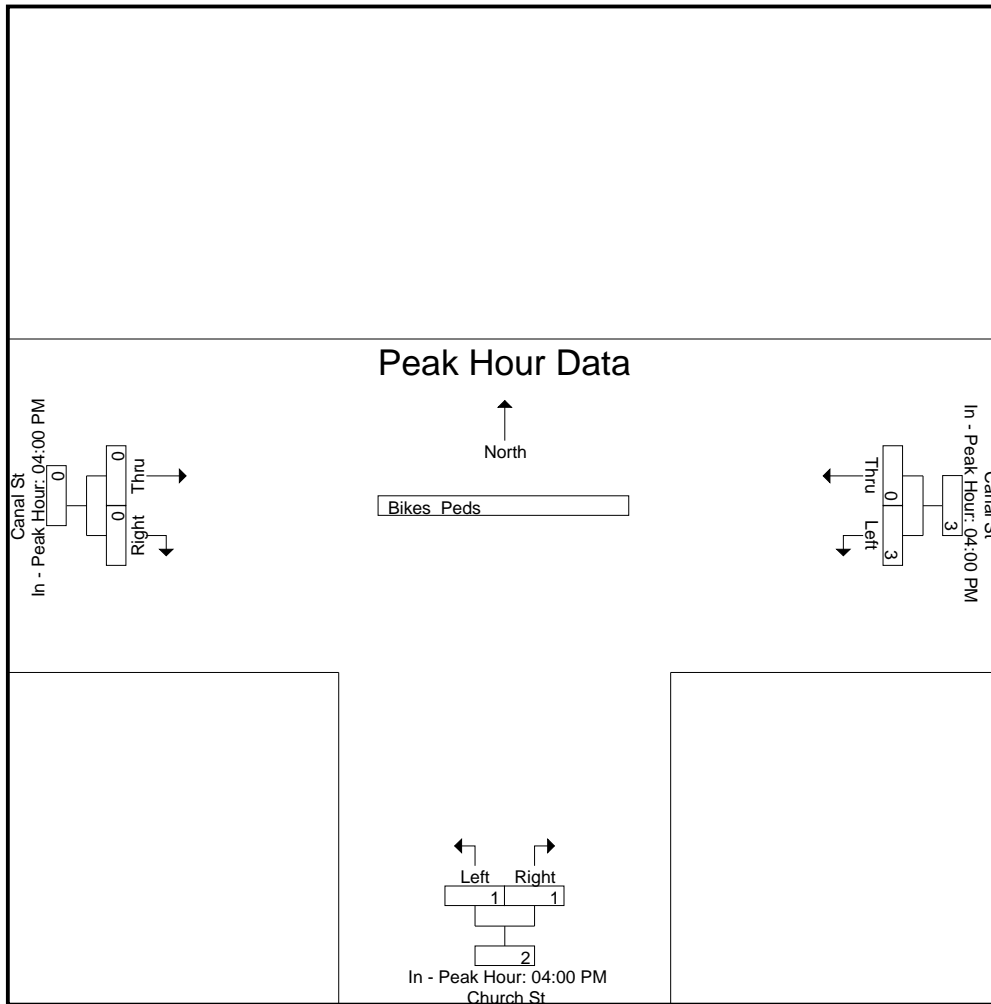
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:00 PM | | | 04:00 PM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| +15 mins. | 3 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 3 | 0 | 3 | 1 | 1 | 2 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | | 50 | 50 | | 0 | 0 | |
| PHF | .250 | .000 | .250 | .250 | .250 | .500 | .000 | .000 | .000 |

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 187600S3
Site Code : 18760003
Start Date : 2/27/2021
Page No : 1

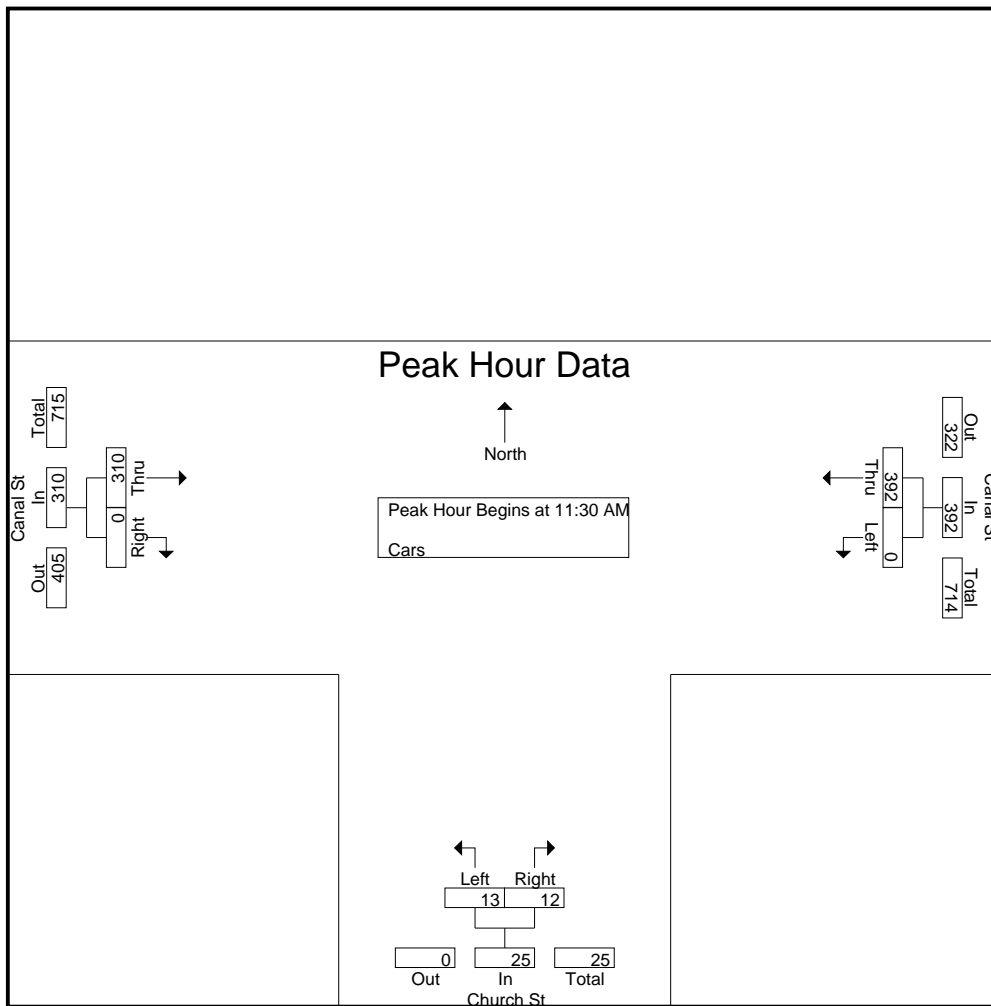
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Cars

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|-----------------------|------------|-------------------------|-----------|-----------------------|----------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 11:00 AM | 0 | 98 | 2 | 0 | 75 | 0 | 175 |
| 11:15 AM | 0 | 85 | 1 | 4 | 77 | 0 | 167 |
| 11:30 AM | 0 | 98 | 4 | 0 | 87 | 0 | 189 |
| 11:45 AM | 0 | 110 | 2 | 5 | 69 | 0 | 186 |
| Total | 0 | 391 | 9 | 9 | 308 | 0 | 717 |
| 12:00 PM | 0 | 88 | 3 | 2 | 86 | 0 | 179 |
| 12:15 PM | 0 | 96 | 4 | 5 | 68 | 0 | 173 |
| 12:30 PM | 0 | 84 | 4 | 2 | 70 | 0 | 160 |
| 12:45 PM | 0 | 64 | 2 | 5 | 64 | 0 | 135 |
| Total | 0 | 332 | 13 | 14 | 288 | 0 | 647 |
| Grand Total | 0 | 723 | 22 | 23 | 596 | 0 | 1364 |
| Apprch % | 0 | 100 | 48.9 | 51.1 | 100 | 0 | |
| Total % | 0 | 53 | 1.6 | 1.7 | 43.7 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|-----------------------|------------|------------|-------------------------|-----------|------------|-----------------------|----------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:30 AM | | | | | | | | | | |
| 11:30 AM | 0 | 98 | 98 | 4 | 0 | 4 | 87 | 0 | 87 | 189 |
| 11:45 AM | 0 | 110 | 110 | 2 | 5 | 7 | 69 | 0 | 69 | 186 |
| 12:00 PM | 0 | 88 | 88 | 3 | 2 | 5 | 86 | 0 | 86 | 179 |
| 12:15 PM | 0 | 96 | 96 | 4 | 5 | 9 | 68 | 0 | 68 | 173 |
| Total Volume | 0 | 392 | 392 | 13 | 12 | 25 | 310 | 0 | 310 | 727 |
| % App. Total | 0 | 100 | | 52 | 48 | | 100 | 0 | | |
| PHF | .000 | .891 | .891 | .813 | .600 | .694 | .891 | .000 | .891 | .962 |

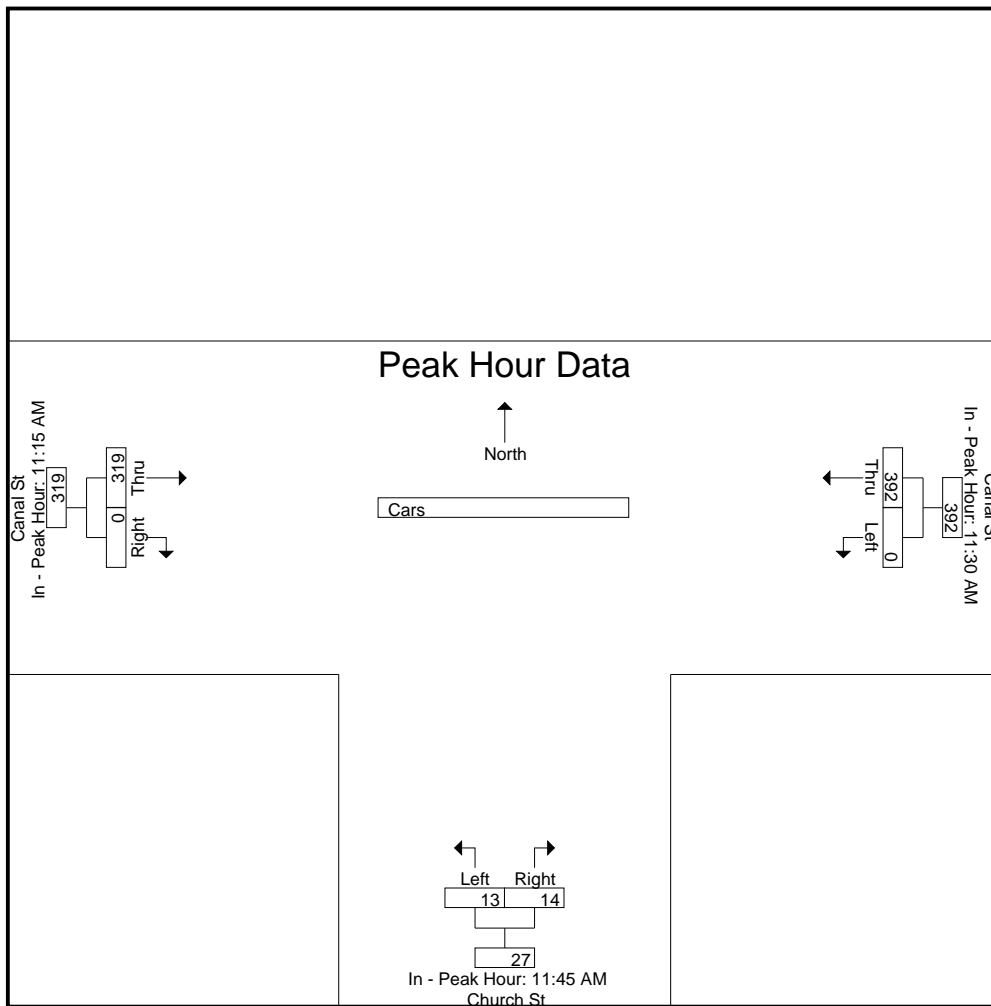
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:30 AM | | | 11:45 AM | | | 11:15 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 98 | 98 | 2 | 5 | 7 | 77 | 0 | 77 |
| +15 mins. | 0 | 110 | 110 | 3 | 2 | 5 | 87 | 0 | 87 |
| +30 mins. | 0 | 88 | 88 | 4 | 5 | 9 | 69 | 0 | 69 |
| +45 mins. | 0 | 96 | 96 | 4 | 2 | 6 | 86 | 0 | 86 |
| Total Volume | 0 | 392 | 392 | 13 | 14 | 27 | 319 | 0 | 319 |
| % App. Total | 0 | 100 | | 48.1 | 51.9 | | 100 | 0 | |
| PHF | .000 | .891 | .891 | .813 | .700 | .750 | .917 | .000 | .917 |

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S3
Site Code : 18760003
Start Date : 2/27/2021
Page No : 1

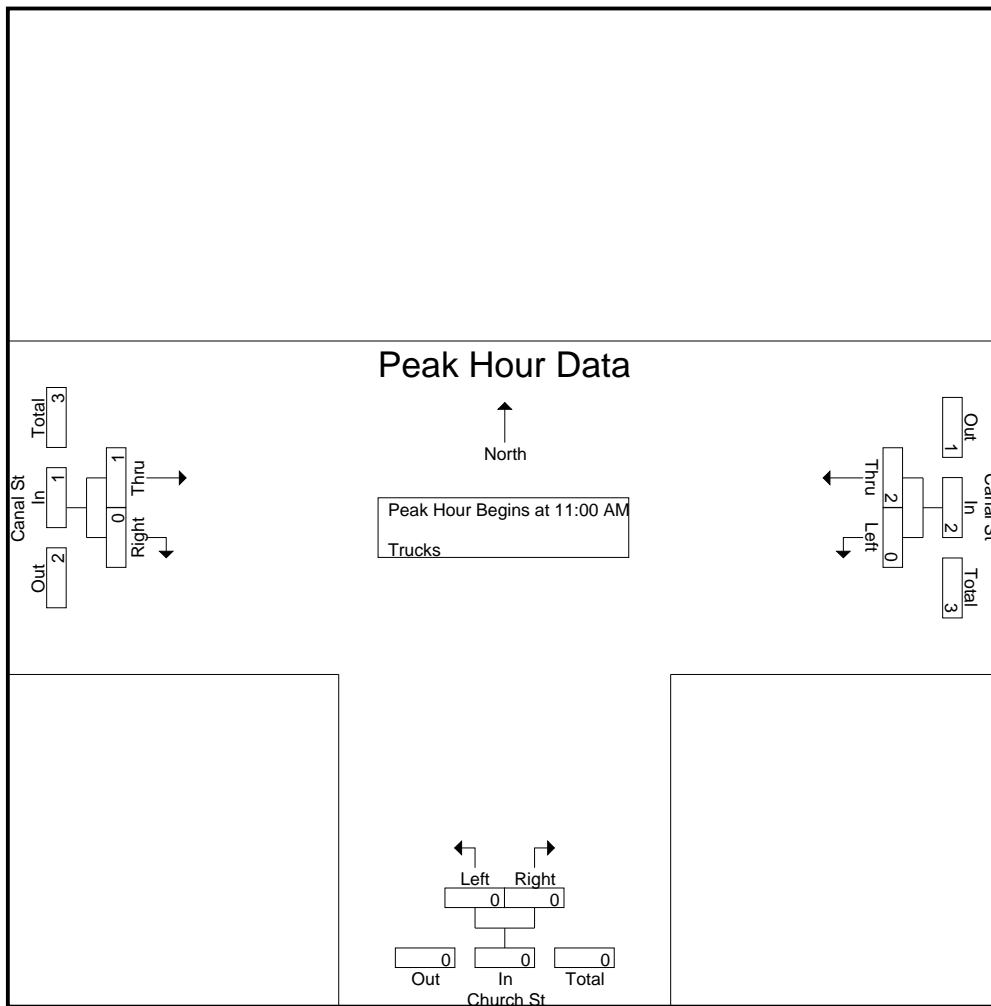
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Trucks

| Start Time | Canal St From East | | Church St From South | | Canal St From West | | Int. Total |
|--------------------|--------------------|----------|----------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 11:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 2 | 0 | 0 | 1 | 0 | 3 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Grand Total | 0 | 2 | 0 | 0 | 2 | 0 | 4 |
| Apprch % | 0 | 100 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 50 | 0 | 0 | 50 | 0 | |

| Start Time | Canal St From East | | | Church St From South | | | Canal St From West | | | Int. Total |
|--|--------------------|-------------|-------------|----------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | |
| 11:00 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | | |
| PHF | .000 | .500 | .500 | .000 | .000 | .000 | .250 | .000 | .250 | .750 |

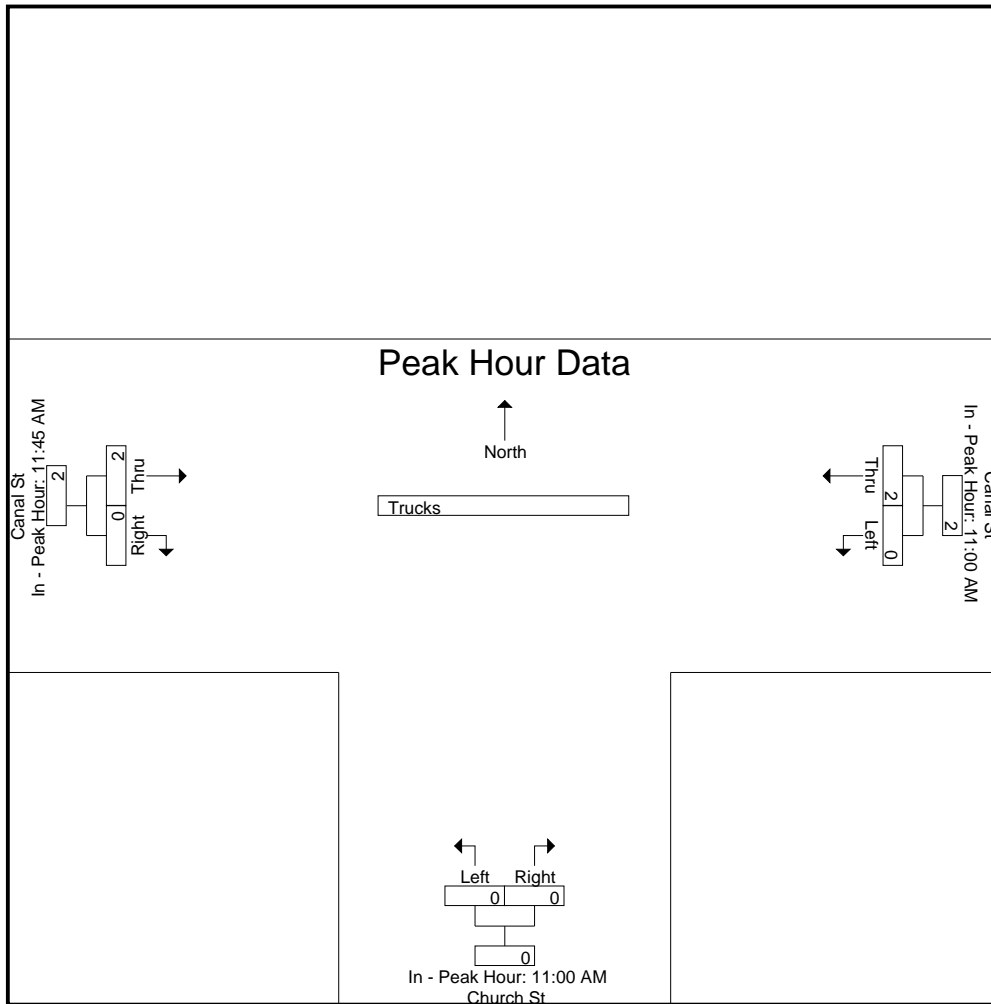
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



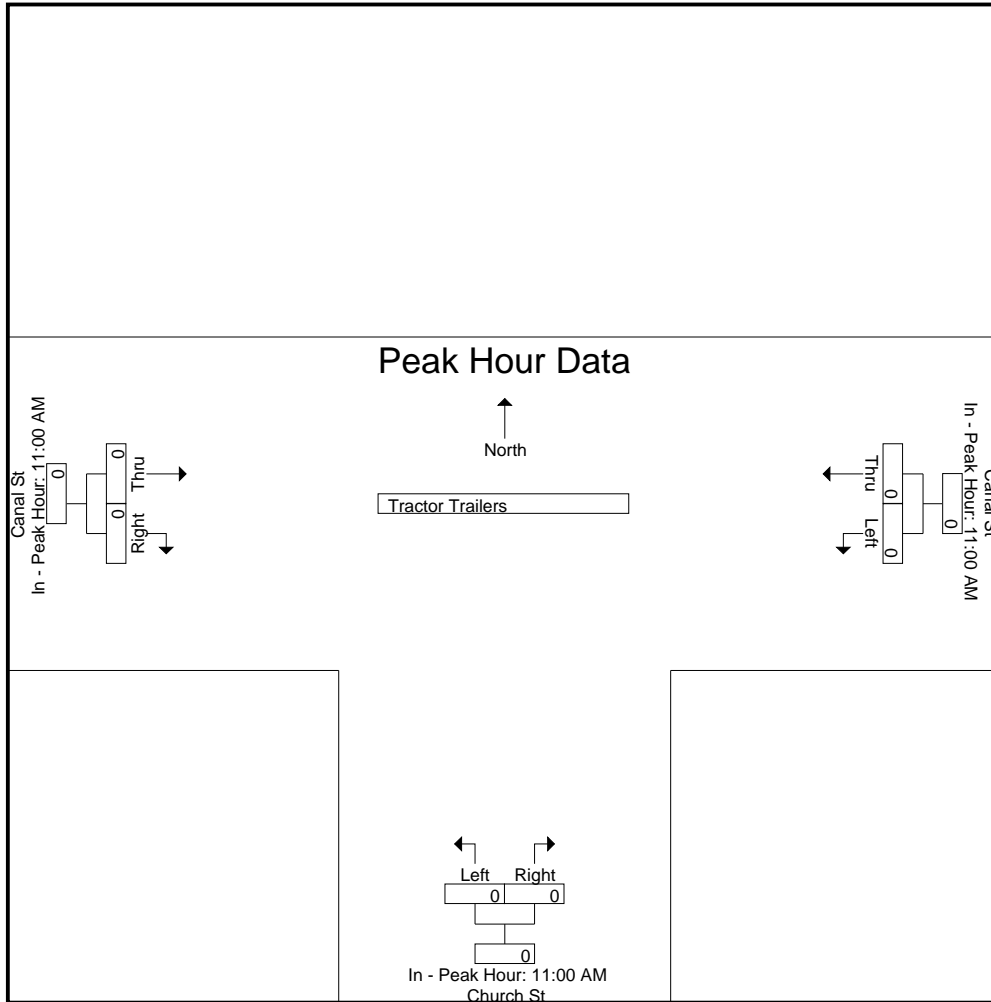
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | 11:00 AM | | | 11:45 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 2 |
| % App. Total | 0 | 100 | | 0 | 0 | | 100 | 0 | |
| PHF | .000 | .500 | .500 | .000 | .000 | .000 | .500 | .000 | .500 |

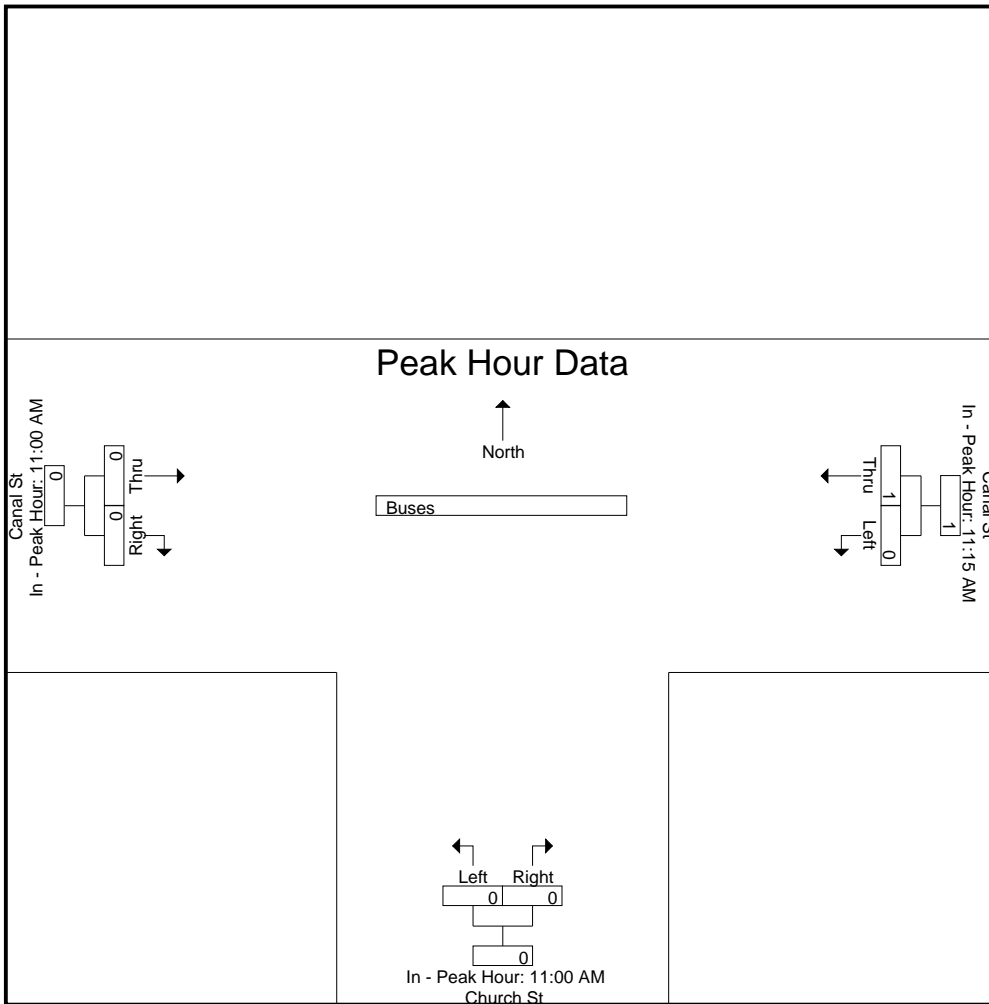
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



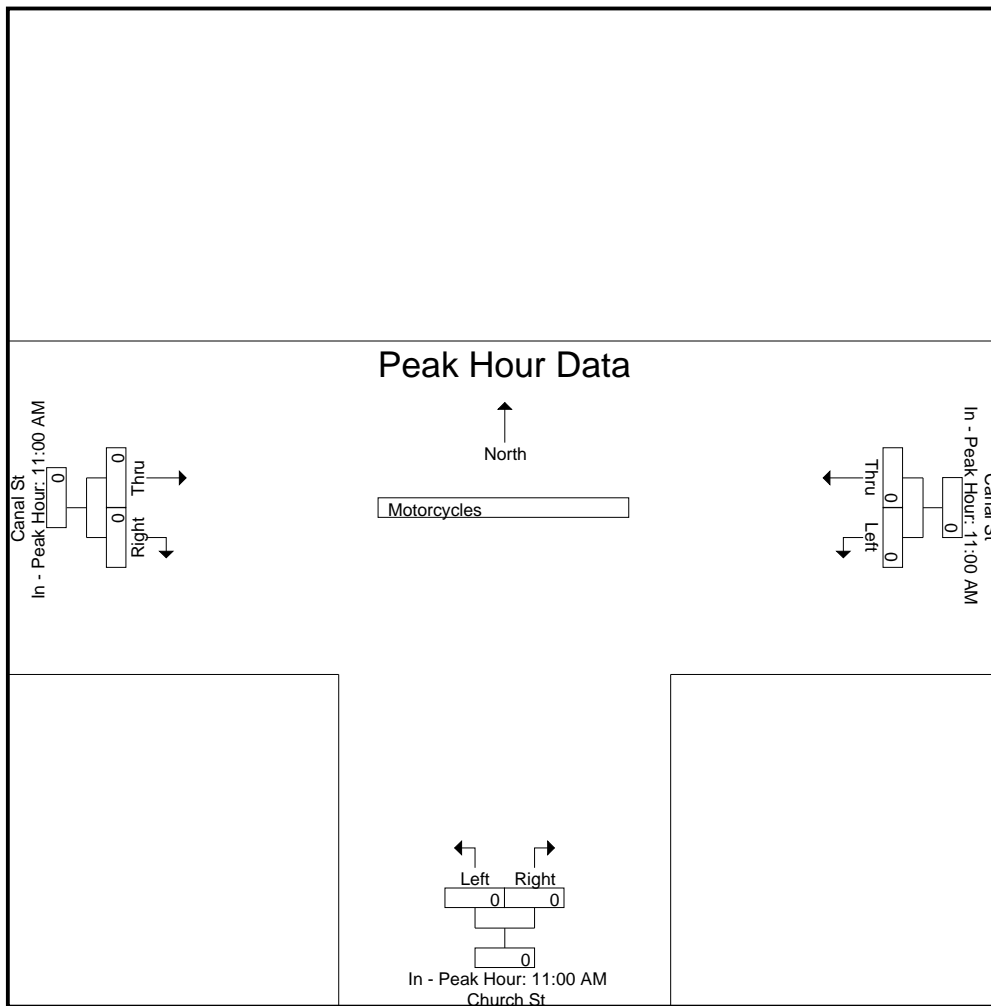
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



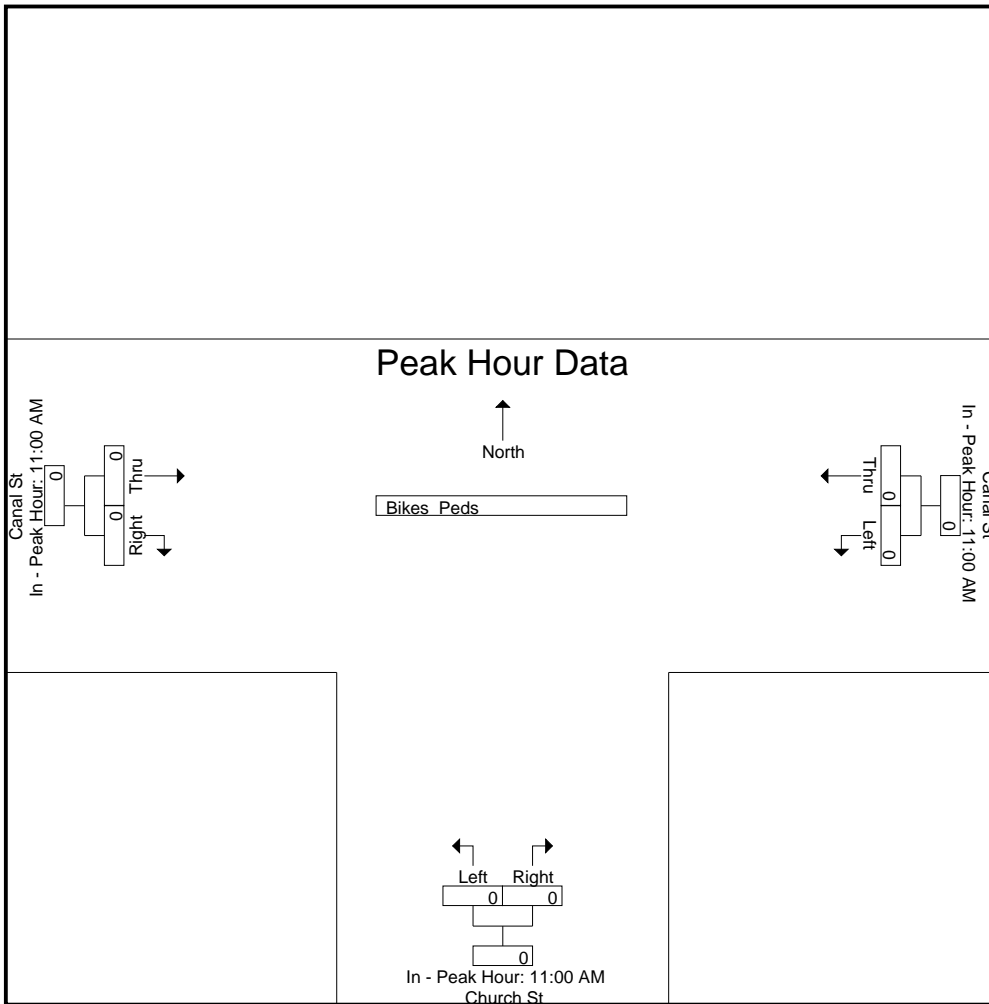
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



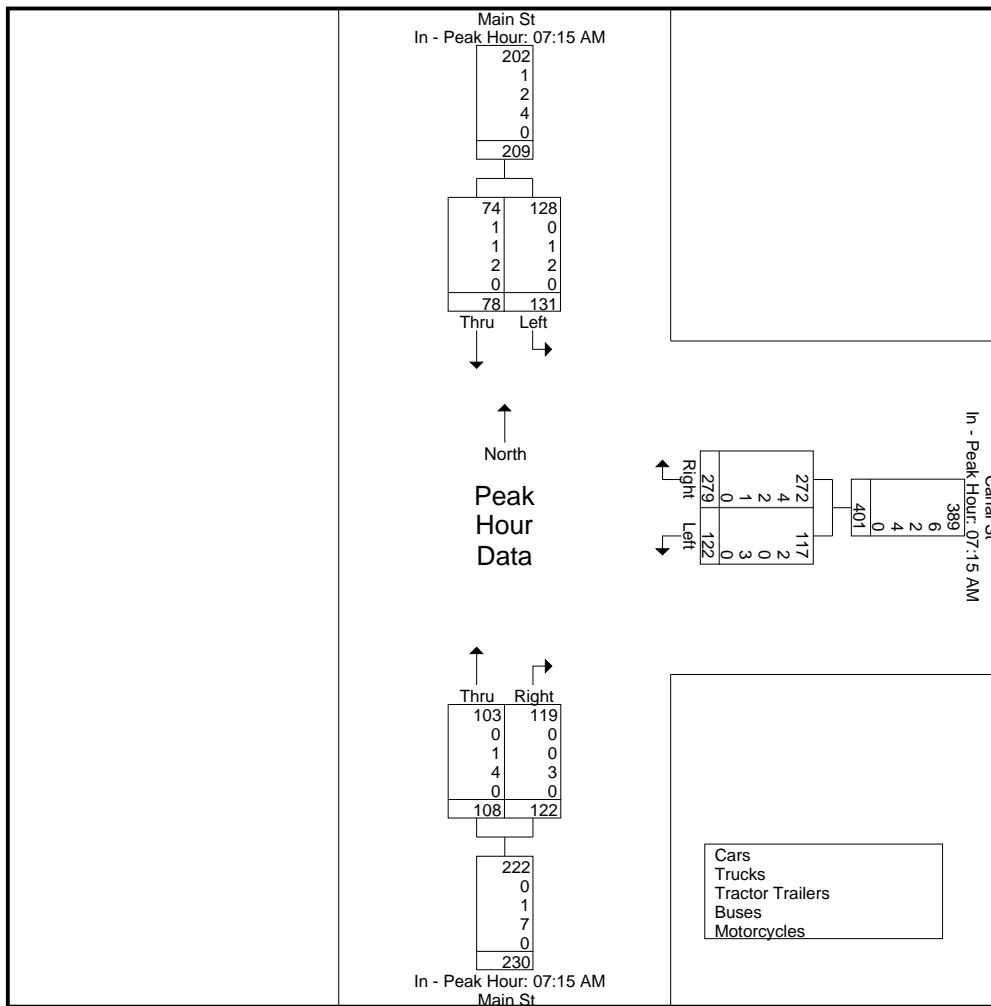
N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 3

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Main Street
 E/W Street : Canal Street
 City/State : Millbury, MA
 Weather : Clear

File Name : 18760004
 Site Code : 18760004
 Start Date : 2/25/2021
 Page No : 1

Groups Printed- Carss

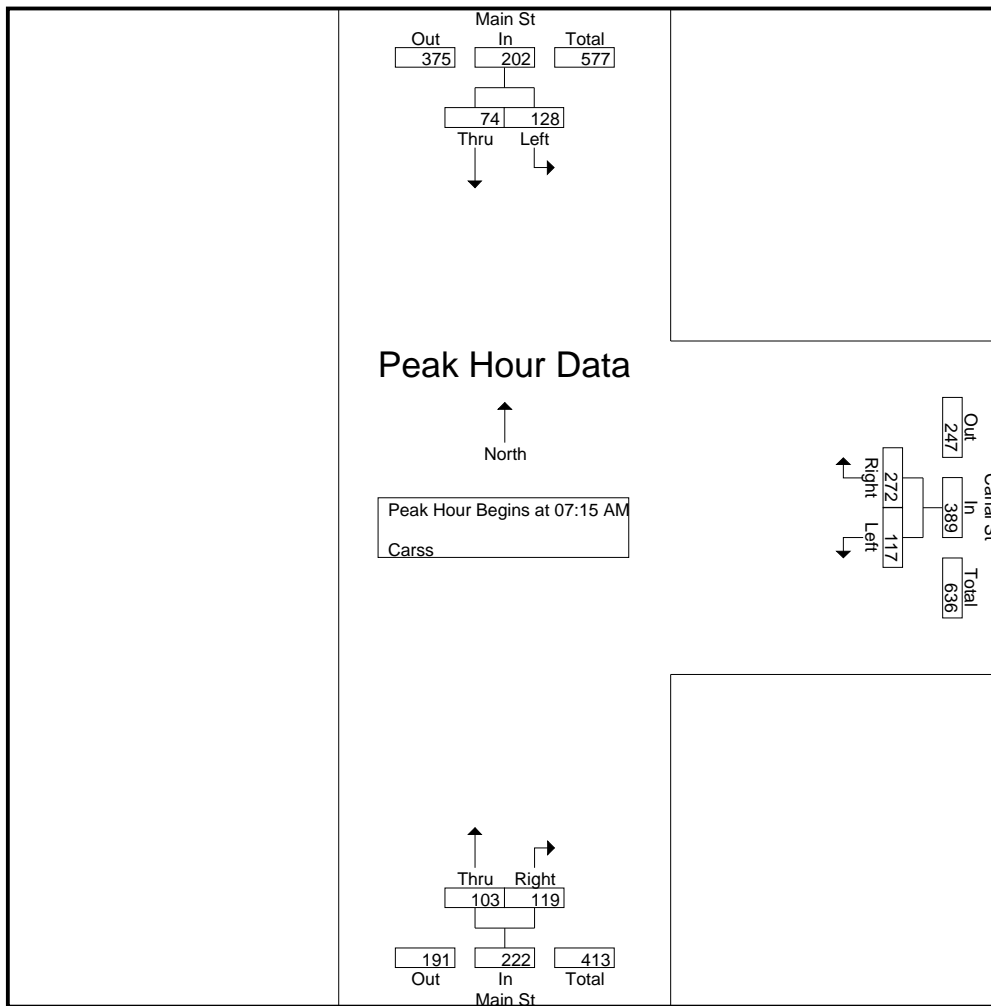
| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|------------|--------------------|------------|--------------------|------------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 31 | 8 | 12 | 51 | 21 | 13 | 136 |
| 07:15 AM | 35 | 16 | 19 | 72 | 32 | 24 | 198 |
| 07:30 AM | 37 | 25 | 21 | 87 | 41 | 34 | 245 |
| 07:45 AM | 30 | 14 | 44 | 68 | 17 | 23 | 196 |
| Total | 133 | 63 | 96 | 278 | 111 | 94 | 775 |
| 08:00 AM | 26 | 19 | 33 | 45 | 13 | 38 | 174 |
| 08:15 AM | 27 | 23 | 33 | 59 | 16 | 15 | 173 |
| 08:30 AM | 30 | 22 | 32 | 57 | 18 | 25 | 184 |
| 08:45 AM | 24 | 19 | 37 | 50 | 27 | 23 | 180 |
| Total | 107 | 83 | 135 | 211 | 74 | 101 | 711 |
| Grand Total | 240 | 146 | 231 | 489 | 185 | 195 | 1486 |
| Apprch % | 62.2 | 37.8 | 32.1 | 67.9 | 48.7 | 51.3 | |
| Total % | 16.2 | 9.8 | 15.5 | 32.9 | 12.4 | 13.1 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-------------|-------------|--------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | |
| 07:15 AM | 35 | 16 | 51 | 19 | 72 | 91 | 32 | 24 | 56 | 198 |
| 07:30 AM | 37 | 25 | 62 | 21 | 87 | 108 | 41 | 34 | 75 | 245 |
| 07:45 AM | 30 | 14 | 44 | 44 | 68 | 112 | 17 | 23 | 40 | 196 |
| 08:00 AM | 26 | 19 | 45 | 33 | 45 | 78 | 13 | 38 | 51 | 174 |
| Total Volume | 128 | 74 | 202 | 117 | 272 | 389 | 103 | 119 | 222 | 813 |
| % App. Total | 63.4 | 36.6 | | 30.1 | 69.9 | | 46.4 | 53.6 | | |
| PHF | .865 | .740 | .815 | .665 | .782 | .868 | .628 | .783 | .740 | .830 |

Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 2

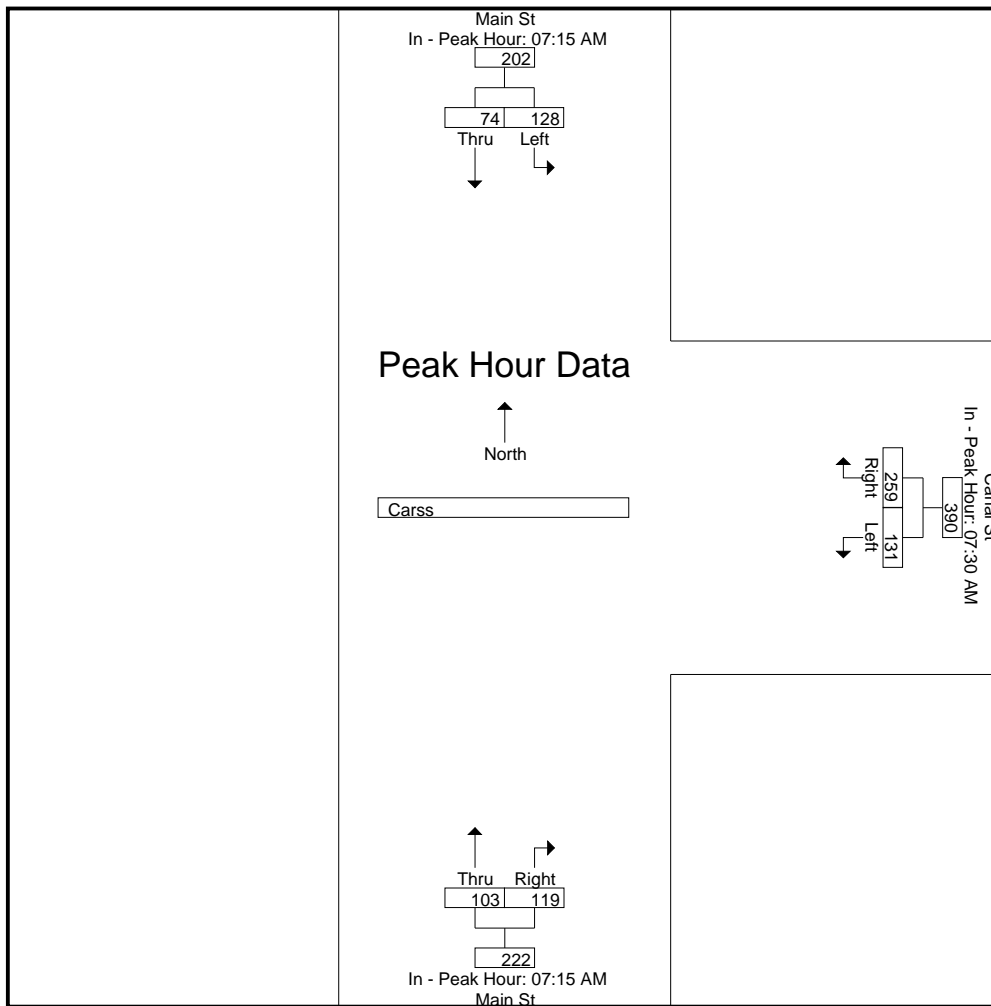
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | 07:30 AM | | | 07:15 AM | | |
|--------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| +0 mins. | 35 | 16 | 51 | 21 | 87 | 108 | 32 | 24 | 56 |
| +15 mins. | 37 | 25 | 62 | 44 | 68 | 112 | 41 | 34 | 75 |
| +30 mins. | 30 | 14 | 44 | 33 | 45 | 78 | 17 | 23 | 40 |
| +45 mins. | 26 | 19 | 45 | 33 | 59 | 92 | 13 | 38 | 51 |
| Total Volume | 128 | 74 | 202 | 131 | 259 | 390 | 103 | 119 | 222 |
| % App. Total | 63.4 | 36.6 | | 33.6 | 66.4 | | 46.4 | 53.6 | |
| PHF | .865 | .740 | .815 | .744 | .744 | .871 | .628 | .783 | .740 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Main Street
 E/W Street : Canal Street
 City/State : Millbury, MA
 Weather : Clear

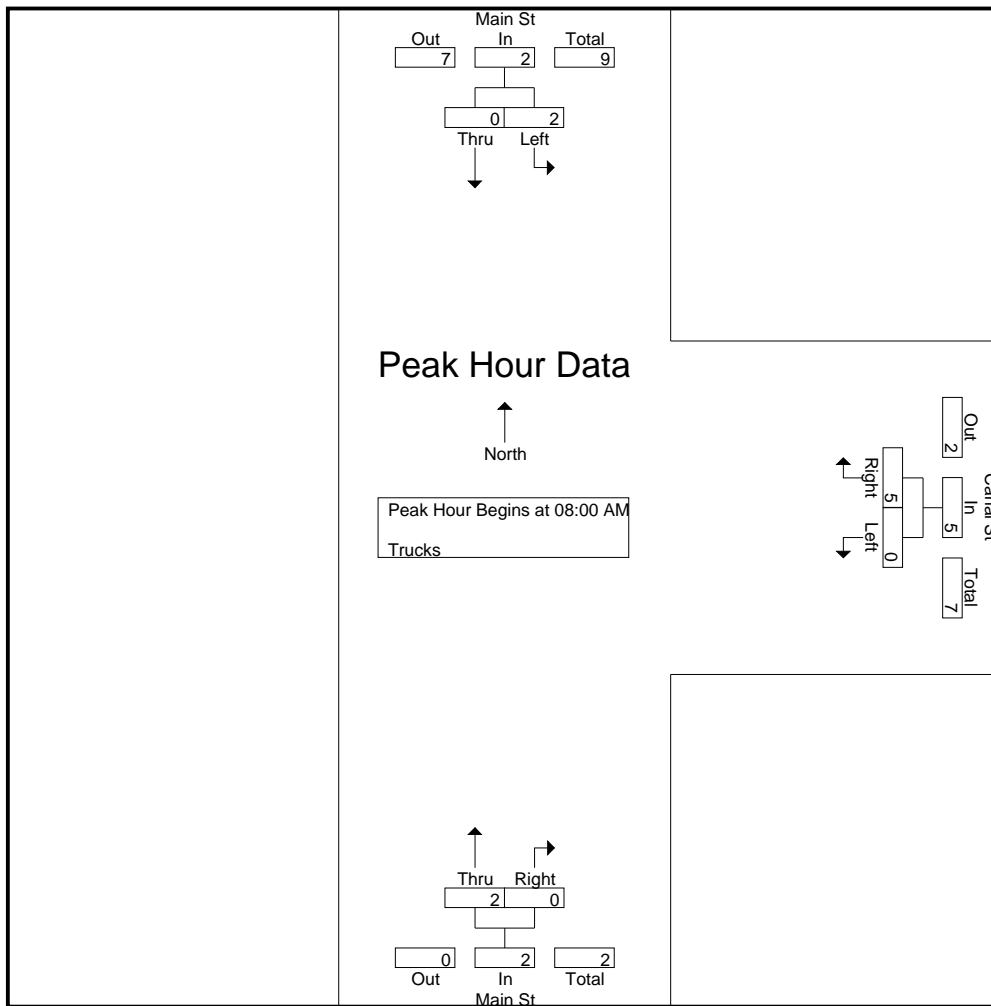
File Name : 18760004
 Site Code : 18760004
 Start Date : 2/25/2021
 Page No : 1

Groups Printed- Trucks

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|----------|--------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 07:15 AM | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 07:30 AM | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| 07:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 4 | 2 | 0 | 0 | 7 |
| 08:00 AM | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 2 | 0 | 0 | 2 | 0 | 0 | 4 |
| 08:45 AM | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| Total | 2 | 0 | 0 | 5 | 2 | 0 | 9 |
| Grand Total | 2 | 1 | 4 | 7 | 2 | 0 | 16 |
| Apprch % | 66.7 | 33.3 | 36.4 | 63.6 | 100 | 0 | |
| Total % | 12.5 | 6.2 | 25 | 43.8 | 12.5 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-------------|-------------|--------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 4 |
| 08:45 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 3 |
| Total Volume | 2 | 0 | 2 | 0 | 5 | 5 | 2 | 0 | 2 | 9 |
| % App. Total | 100 | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 | 0 |
| PHF | .250 | .000 | .250 | .000 | .625 | .625 | .250 | .000 | .250 | .563 |

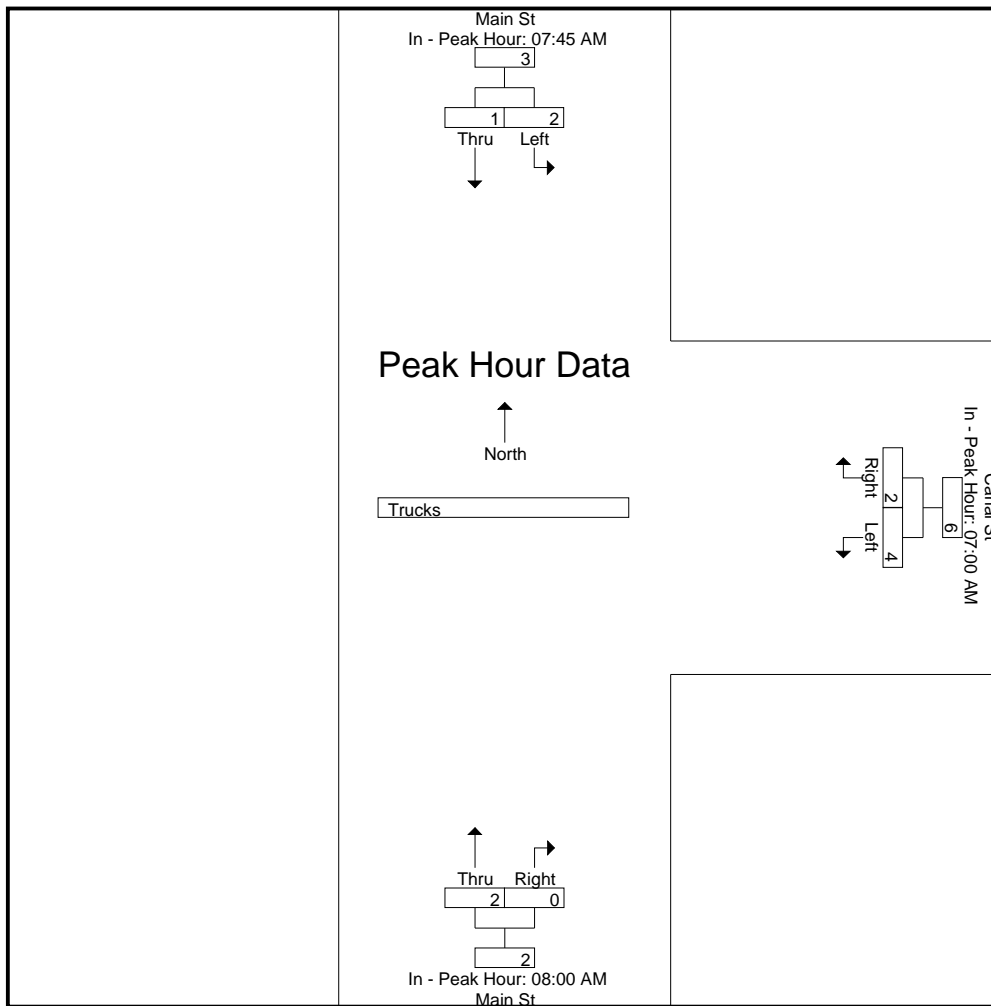
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:45 AM | | | 07:00 AM | | | 08:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| +45 mins. | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total Volume | 2 | 1 | 3 | 4 | 2 | 6 | 2 | 0 | 2 |
| % App. Total | 66.7 | 33.3 | | 66.7 | 33.3 | | 100 | 0 | |
| PHF | .250 | .250 | .375 | .500 | .500 | .750 | .250 | .000 | .250 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 1

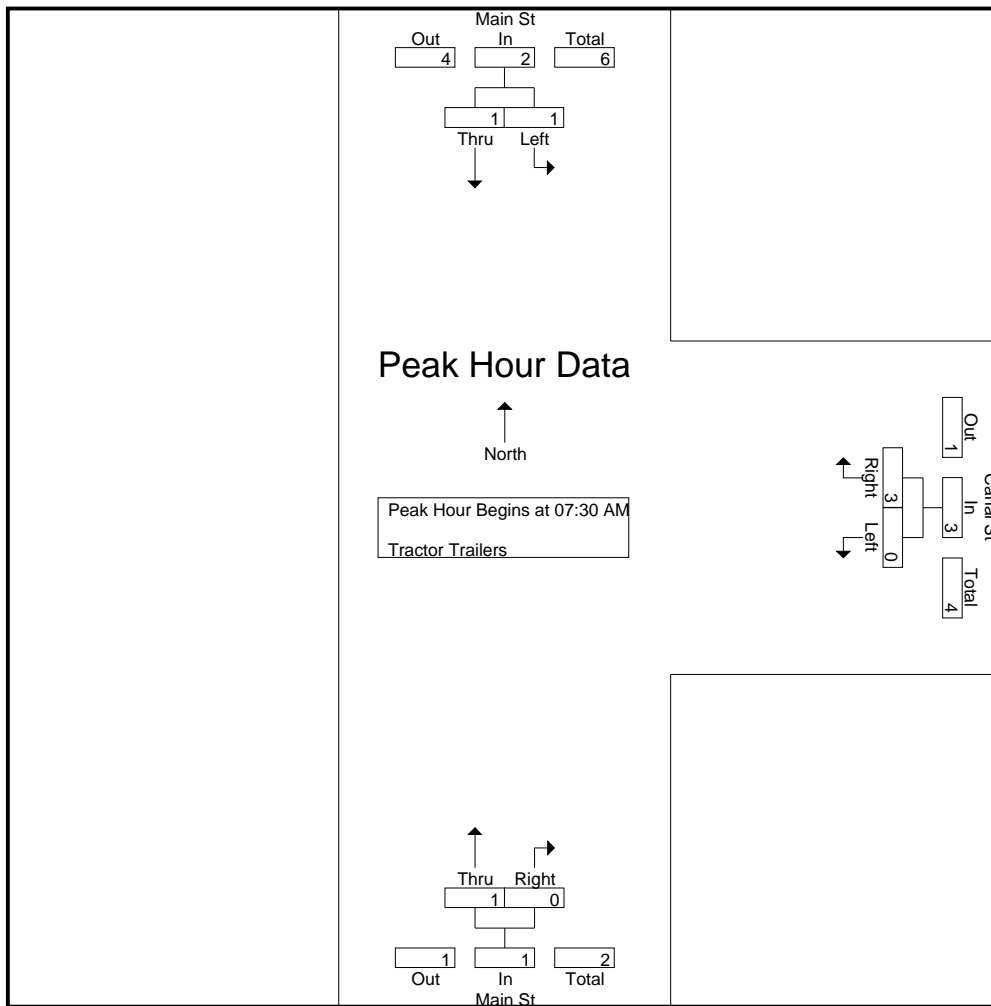
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Tractor Trailers

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|----------|--------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 07:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 1 | 0 | 2 | 0 | 0 | 4 |
| 08:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 2 |
| 08:15 AM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 08:45 AM | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 3 | 0 | 0 | 2 | 1 | 0 | 6 |
| Grand Total | 4 | 1 | 0 | 4 | 1 | 0 | 10 |
| Apprch % | 80 | 20 | 0 | 100 | 100 | 0 | |
| Total % | 40 | 10 | 0 | 40 | 10 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-------------|-------------|--------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 |
| 07:45 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:00 AM | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 08:15 AM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total Volume | 1 | 1 | 2 | 0 | 3 | 3 | 1 | 0 | 1 | 6 |
| % App. Total | 50 | 50 | | 0 | 100 | | 100 | 0 | | |
| PHF | .250 | .250 | .500 | .000 | .375 | .375 | .250 | .000 | .250 | .750 |

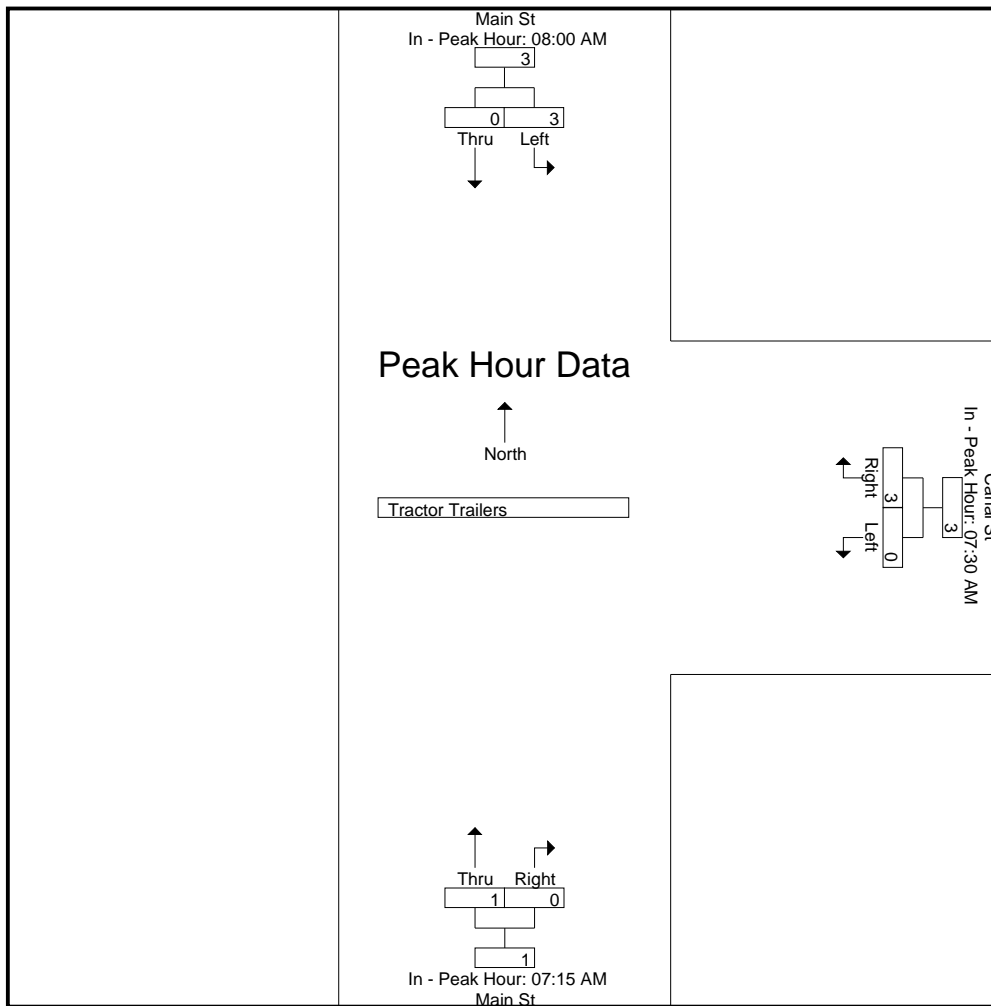
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | 07:30 AM | | | 07:15 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 1 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 2 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 |
| Total Volume | 3 | 0 | 3 | 0 | 3 | 3 | 1 | 0 | 1 |
| % App. Total | 100 | 0 | | 0 | 100 | | 100 | 0 | |
| PHF | .375 | .000 | .375 | .000 | .375 | .375 | .250 | .000 | .250 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 1

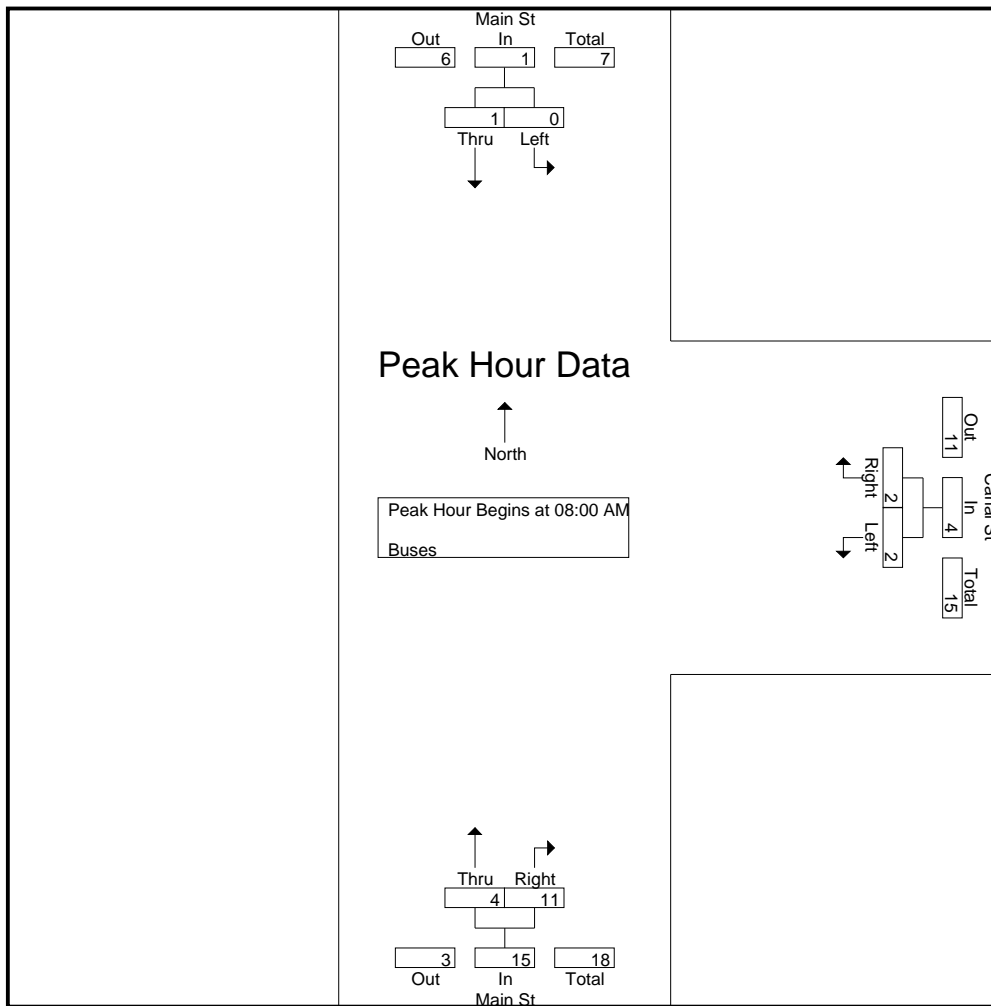
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Buses

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|----------|--------------------|----------|--------------------|-----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 4 | 3 | 0 | 7 |
| 07:15 AM | 2 | 1 | 0 | 1 | 1 | 0 | 5 |
| 07:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Total | 2 | 1 | 3 | 5 | 4 | 0 | 15 |
| 08:00 AM | 0 | 1 | 0 | 0 | 3 | 3 | 7 |
| 08:15 AM | 0 | 0 | 0 | 1 | 0 | 2 | 3 |
| 08:30 AM | 0 | 0 | 2 | 1 | 0 | 1 | 4 |
| 08:45 AM | 0 | 0 | 0 | 0 | 1 | 5 | 6 |
| Total | 0 | 1 | 2 | 2 | 4 | 11 | 20 |
| Grand Total | 2 | 2 | 5 | 7 | 8 | 11 | 35 |
| Apprch % | 50 | 50 | 41.7 | 58.3 | 42.1 | 57.9 | |
| Total % | 5.7 | 5.7 | 14.3 | 20 | 22.9 | 31.4 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|------------|------------|--------------------|-----------|------------|--------------------|-------------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 3 | 6 | 7 |
| 08:15 AM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 | 3 |
| 08:30 AM | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 1 | 1 | 4 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 6 |
| Total Volume | 0 | 1 | 1 | 2 | 2 | 4 | 4 | 11 | 15 | 20 |
| % App. Total | 0 | 100 | | 50 | 50 | | 26.7 | 73.3 | | |
| PHF | .000 | .250 | .250 | .250 | .500 | .333 | .333 | .550 | .625 | .714 |

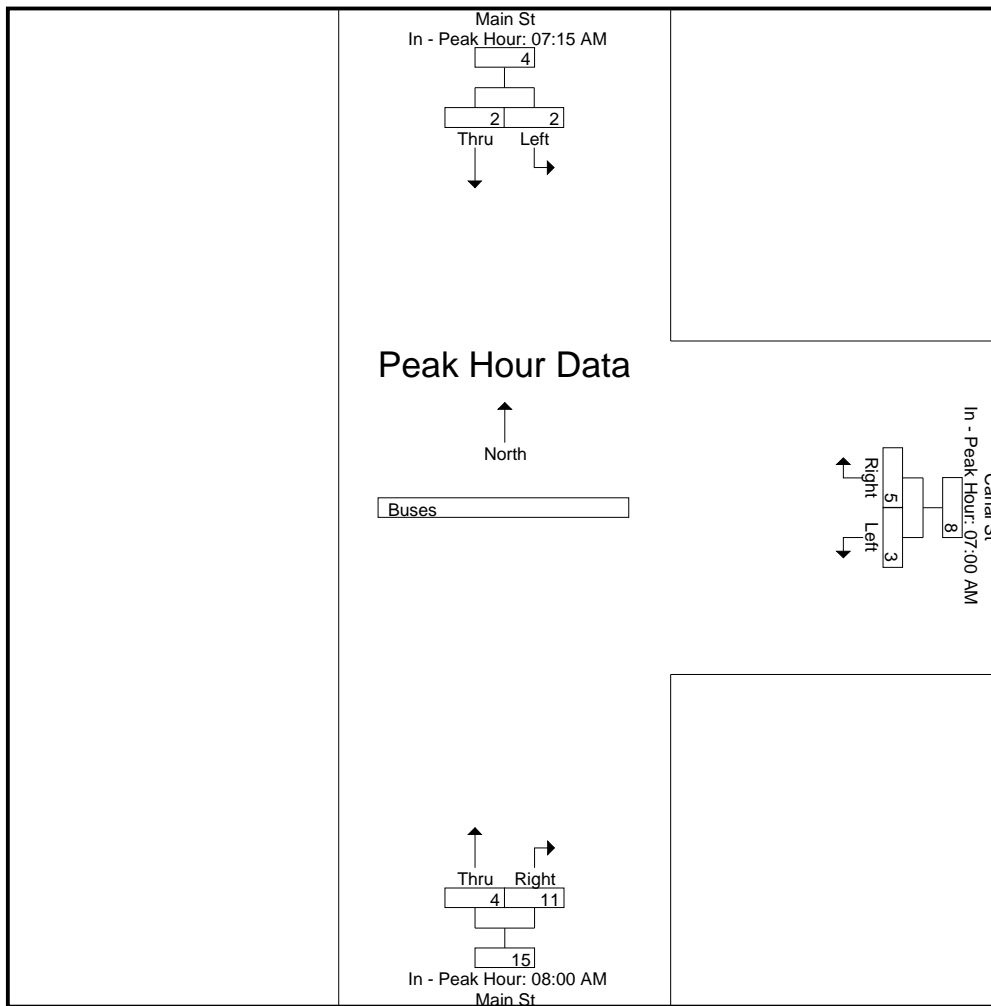
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



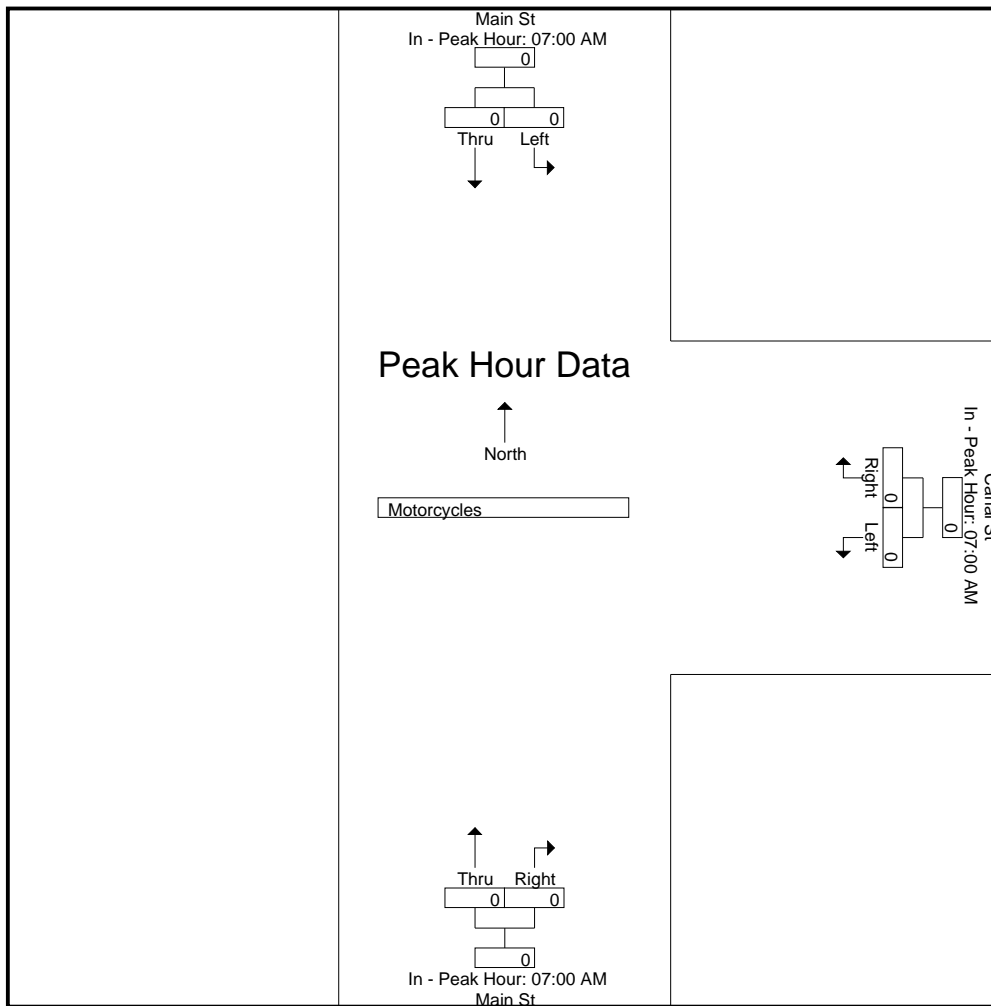
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | 07:00 AM | | | 08:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 2 | 1 | 3 | 0 | 4 | 4 | 3 | 3 | 6 |
| +15 mins. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 |
| +30 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| +45 mins. | 0 | 1 | 1 | 2 | 0 | 2 | 1 | 5 | 6 |
| Total Volume | 2 | 2 | 4 | 3 | 5 | 8 | 4 | 11 | 15 |
| % App. Total | 50 | 50 | | 37.5 | 62.5 | | 26.7 | 73.3 | |
| PHF | .250 | .500 | .333 | .375 | .313 | .500 | .333 | .550 | .625 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 1

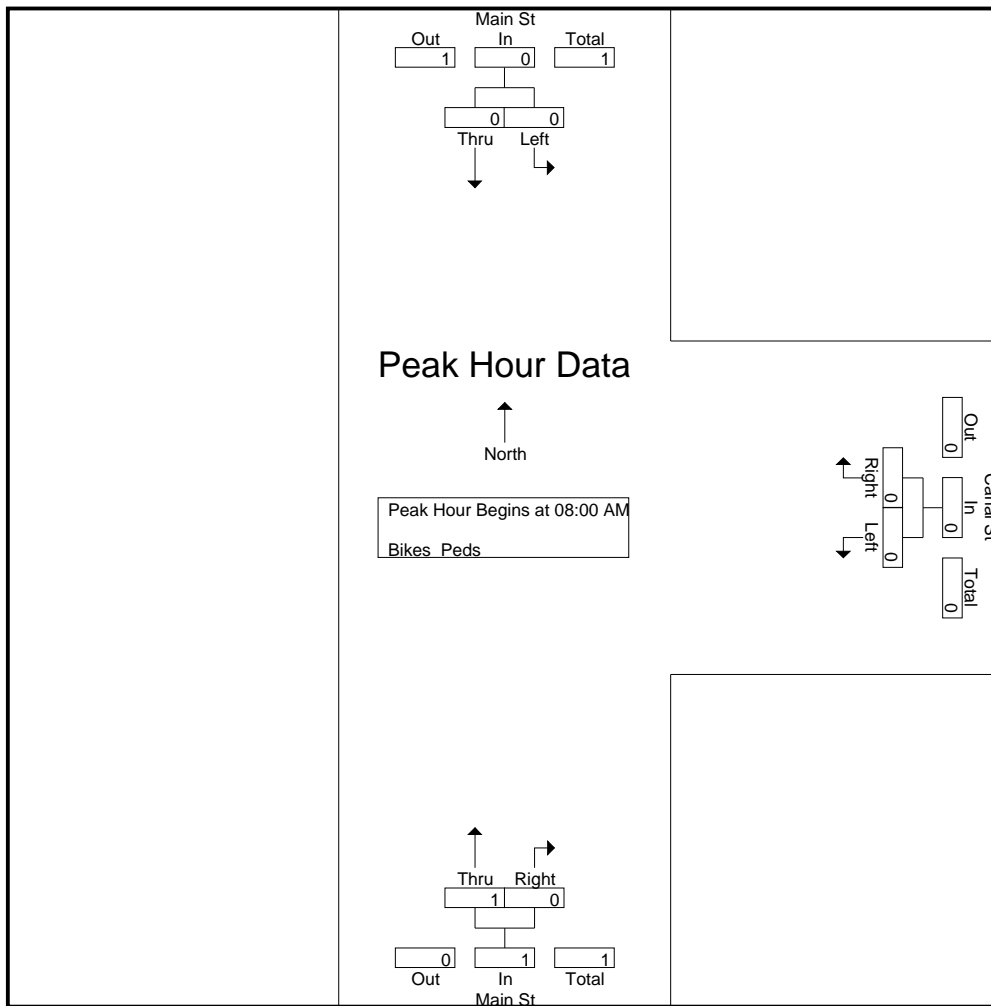
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Bikes Peds

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-----------------------|------|------|-----------------------|-------|------|-----------------------|-------|------|--------------|--------------|------------|
| | Left | Thru | Peds | Left | Right | Peds | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 5 | 0 | 5 |
| Total | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 6 | 0 | 6 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 3 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 |
| Total | 0 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 1 | 5 | 1 | 6 |
| Grand Total | 0 | 0 | 1 | 0 | 0 | 8 | 1 | 0 | 2 | 11 | 1 | 12 |
| Apprch % | 0 | 0 | | 0 | 0 | | 100 | 0 | | | | |
| Total % | 0 | 0 | | 0 | 0 | | 100 | 0 | | 91.7 | 8.3 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|-----------------------|------|------------|-----------------------|-------|------------|-----------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| % App. Total | 0 | 0 | | 0 | 0 | | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .250 |

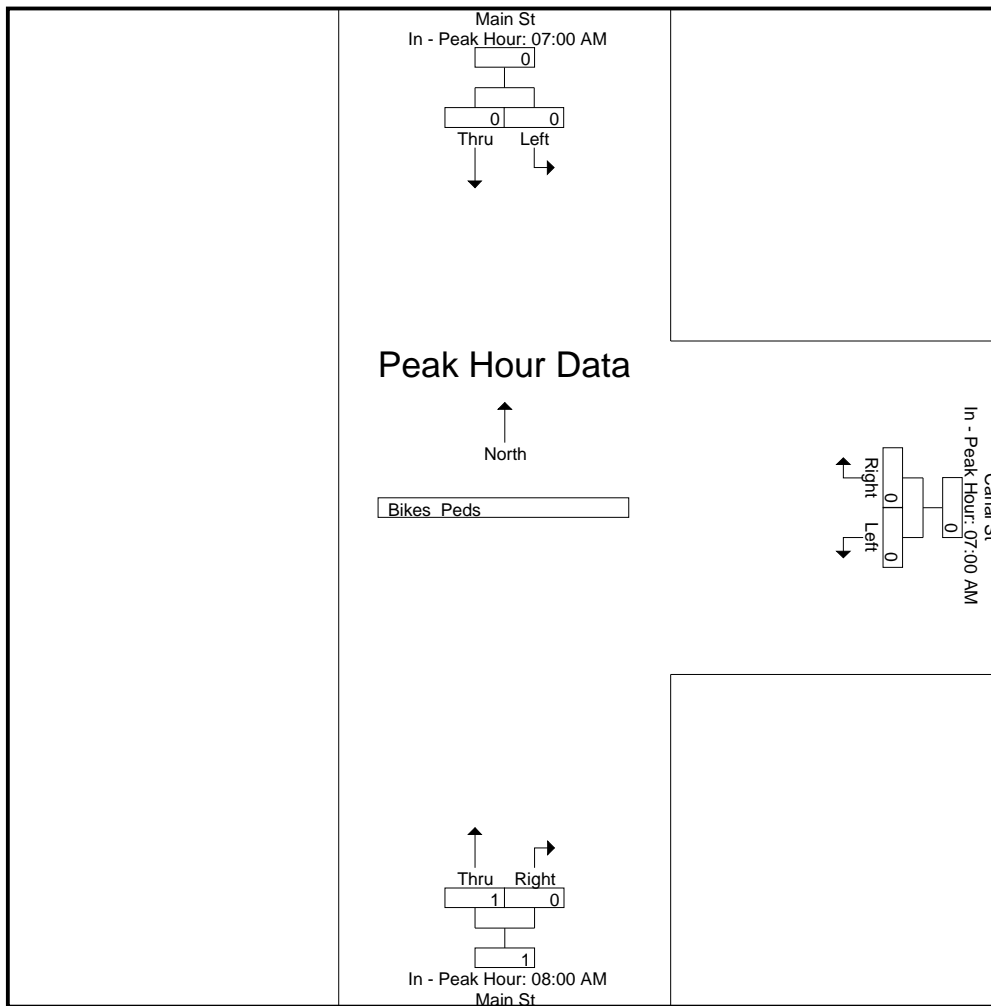
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | 07:00 AM | | | 08:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 |

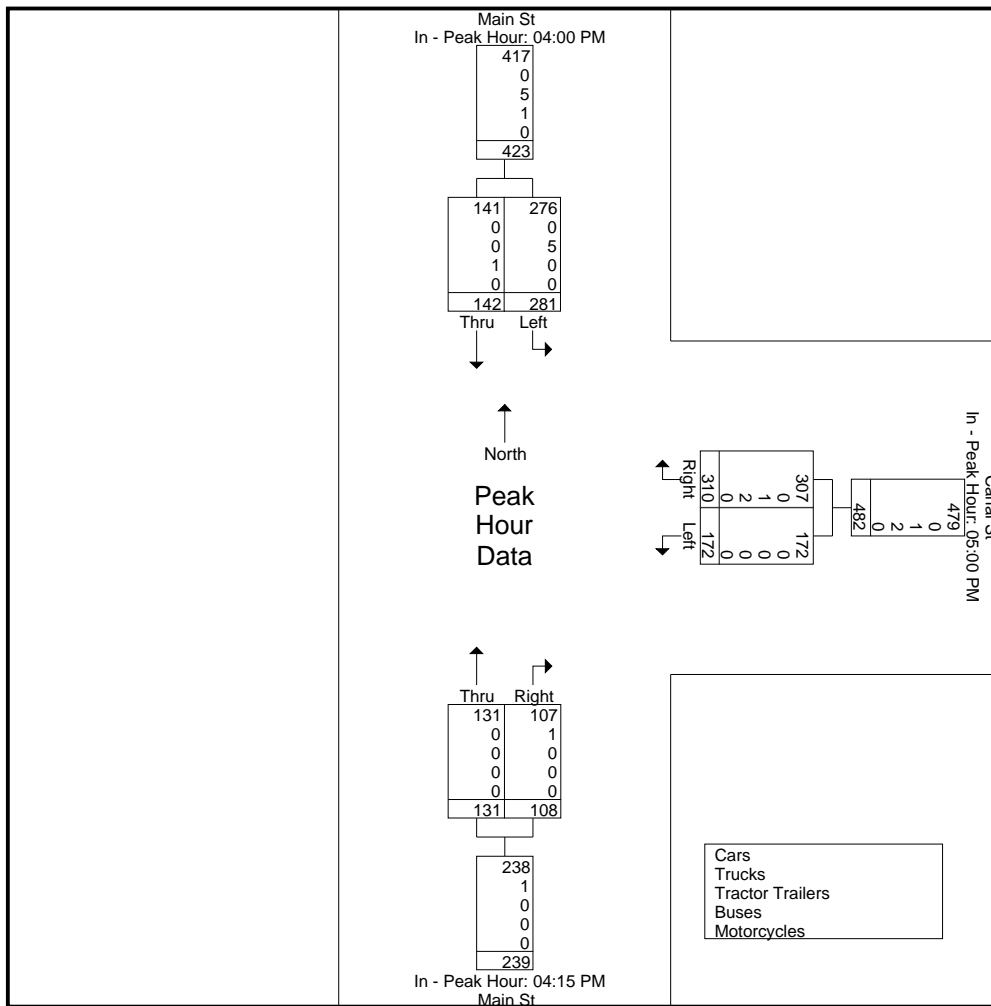
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 3

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts

978-664-2565

File Name : 18760004

Site Code : 18760004

Start Date : 2/25/2021

Page No : 1

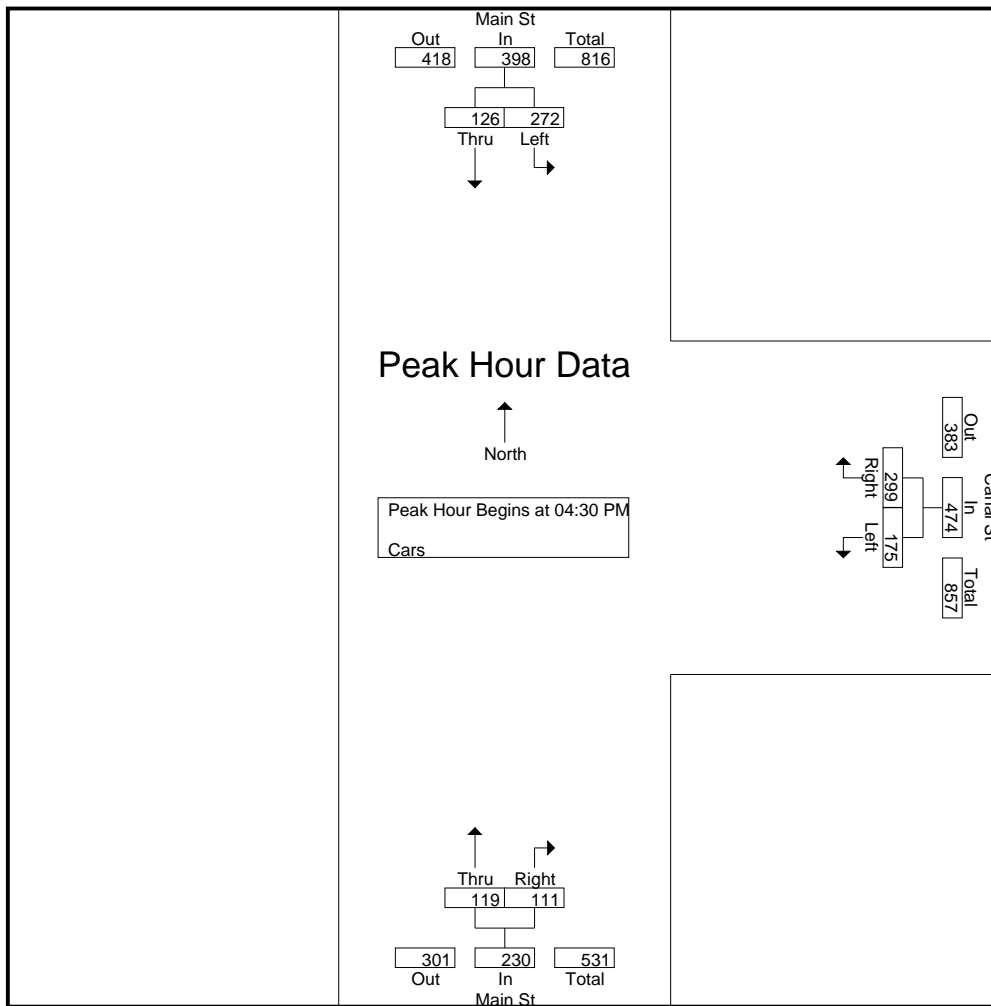
N/S Street : Main Street
 E/W Street : Canal Street
 City/State : Millbury, MA
 Weather : Clear

Groups Printed- Cars

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|------------|--------------------|------------|--------------------|------------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 76 | 40 | 52 | 62 | 32 | 30 | 292 |
| 04:15 PM | 62 | 33 | 27 | 83 | 33 | 22 | 260 |
| 04:30 PM | 68 | 40 | 51 | 65 | 26 | 27 | 277 |
| 04:45 PM | 70 | 28 | 39 | 58 | 30 | 26 | 251 |
| Total | 276 | 141 | 169 | 268 | 121 | 105 | 1080 |
| 05:00 PM | 68 | 25 | 36 | 103 | 42 | 32 | 306 |
| 05:15 PM | 66 | 33 | 49 | 73 | 21 | 26 | 268 |
| 05:30 PM | 55 | 30 | 52 | 66 | 17 | 25 | 245 |
| 05:45 PM | 56 | 28 | 35 | 65 | 22 | 27 | 233 |
| Total | 245 | 116 | 172 | 307 | 102 | 110 | 1052 |
| Grand Total | 521 | 257 | 341 | 575 | 223 | 215 | 2132 |
| Apprch % | 67 | 33 | 37.2 | 62.8 | 50.9 | 49.1 | |
| Total % | 24.4 | 12.1 | 16 | 27 | 10.5 | 10.1 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-------------|------------|--------------------|-------------|------------|--------------------|-------------|------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | |
| 04:30 PM | 68 | 40 | 108 | 51 | 65 | 116 | 26 | 27 | 53 | 277 |
| 04:45 PM | 70 | 28 | 98 | 39 | 58 | 97 | 30 | 26 | 56 | 251 |
| 05:00 PM | 68 | 25 | 93 | 36 | 103 | 139 | 42 | 32 | 74 | 306 |
| 05:15 PM | 66 | 33 | 99 | 49 | 73 | 122 | 21 | 26 | 47 | 268 |
| Total Volume | 272 | 126 | 398 | 175 | 299 | 474 | 119 | 111 | 230 | 1102 |
| % App. Total | 68.3 | 31.7 | | 36.9 | 63.1 | | 51.7 | 48.3 | | |
| PHF | .971 | .788 | .921 | .858 | .726 | .853 | .708 | .867 | .777 | .900 |

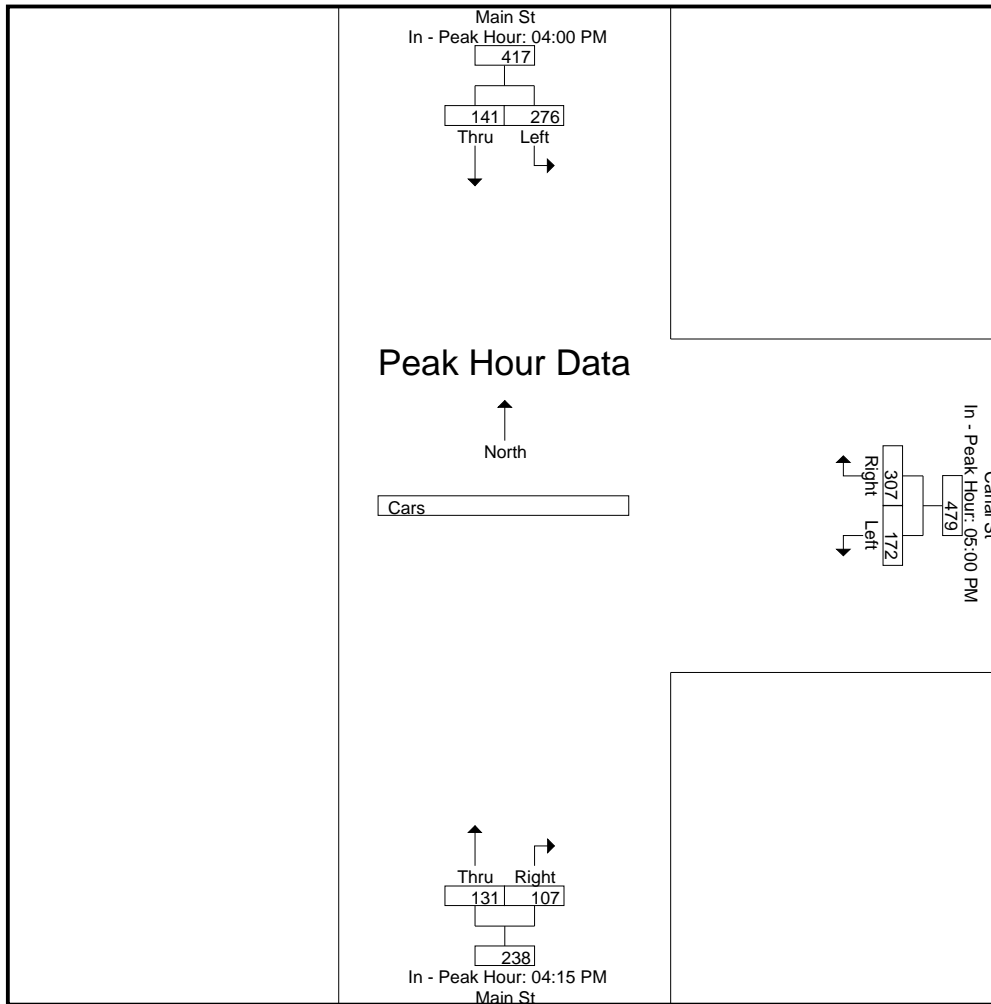
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 05:00 PM | | | 04:15 PM | | |
|--------------|-----------|-----------|------------|-----------|------------|------------|-----------|-----------|-----------|
| +0 mins. | 76 | 40 | 116 | 36 | 103 | 139 | 33 | 22 | 55 |
| +15 mins. | 62 | 33 | 95 | 49 | 73 | 122 | 26 | 27 | 53 |
| +30 mins. | 68 | 40 | 108 | 52 | 66 | 118 | 30 | 26 | 56 |
| +45 mins. | 70 | 28 | 98 | 35 | 65 | 100 | 42 | 32 | 74 |
| Total Volume | 276 | 141 | 417 | 172 | 307 | 479 | 131 | 107 | 238 |
| % App. Total | 66.2 | 33.8 | | 35.9 | 64.1 | | 55 | 45 | |
| PHF | .908 | .881 | .899 | .827 | .745 | .862 | .780 | .836 | .804 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 1

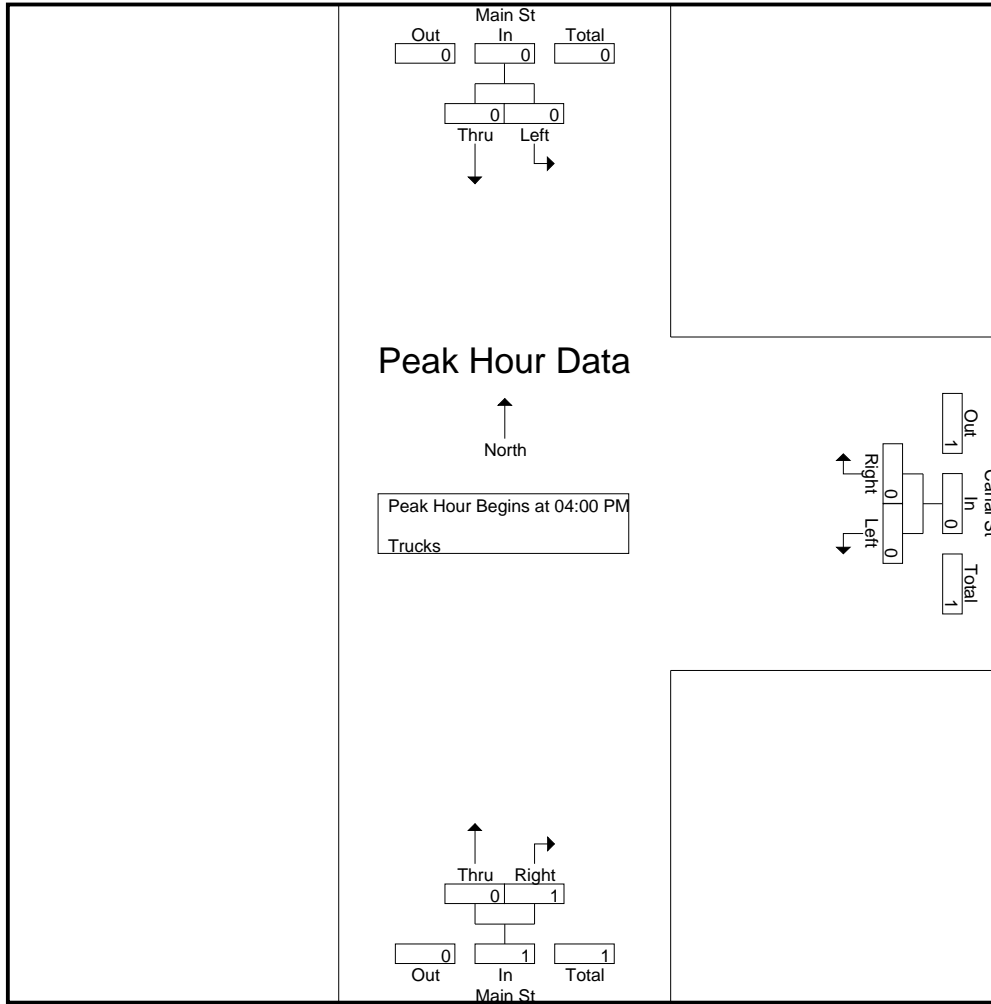
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Trucks

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|-------------|--------------------|------|--------------------|-------|--------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 100 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 100 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|------|------------|--------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| % App. Total | 0 | 0 | | 0 | 0 | | 0 | 100 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .250 |

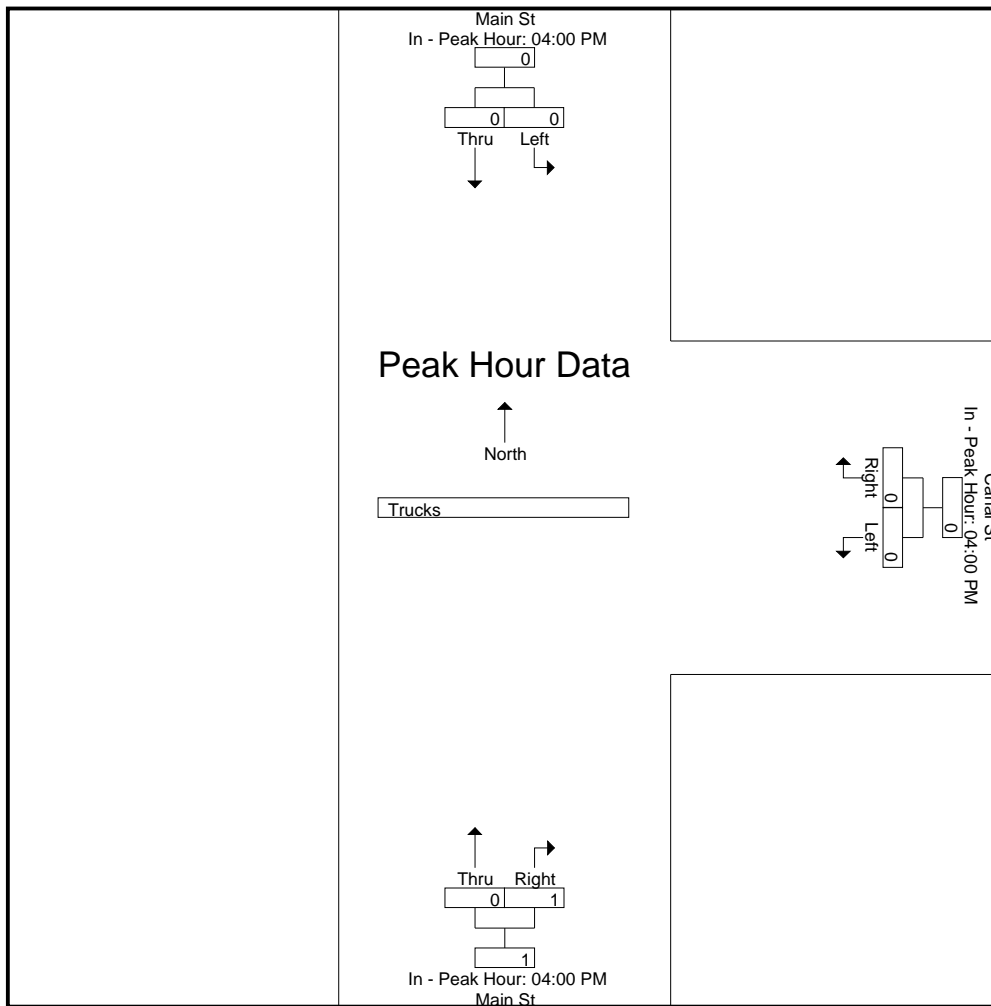
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:00 PM | | | 04:00 PM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 1

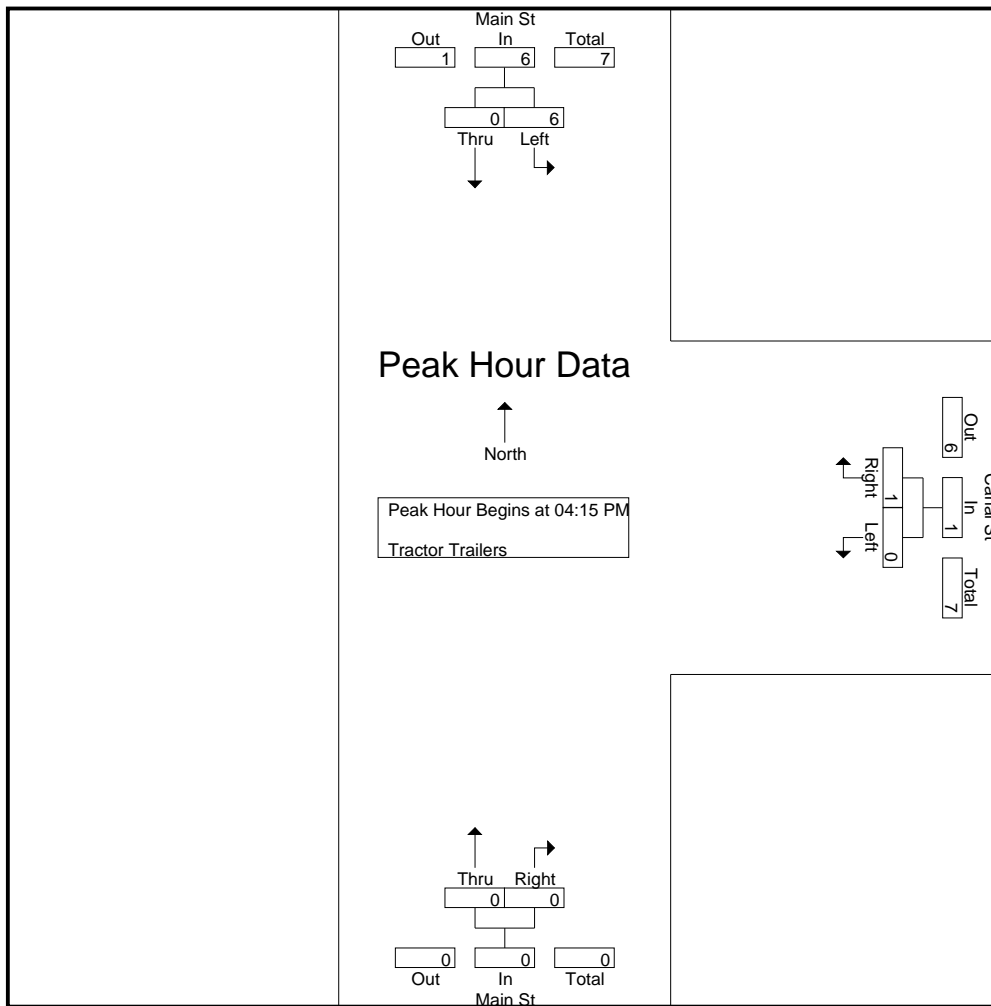
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Tractor Trailers

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|----------|--------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 04:15 PM | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:30 PM | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:45 PM | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 5 | 0 | 0 | 1 | 0 | 0 | 6 |
| 05:00 PM | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| Grand Total | 6 | 0 | 0 | 2 | 0 | 0 | 8 |
| Apprch % | 100 | 0 | 0 | 100 | 0 | 0 | |
| Total % | 75 | 0 | 0 | 25 | 0 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|------|------------|--------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | |
| 04:15 PM | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:30 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:45 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 PM | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Total Volume | 6 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 7 |
| % App. Total | 100 | 0 | | 0 | 100 | | 0 | 0 | | |
| PHF | .500 | .000 | .500 | .000 | .250 | .250 | .000 | .000 | .000 | .583 |

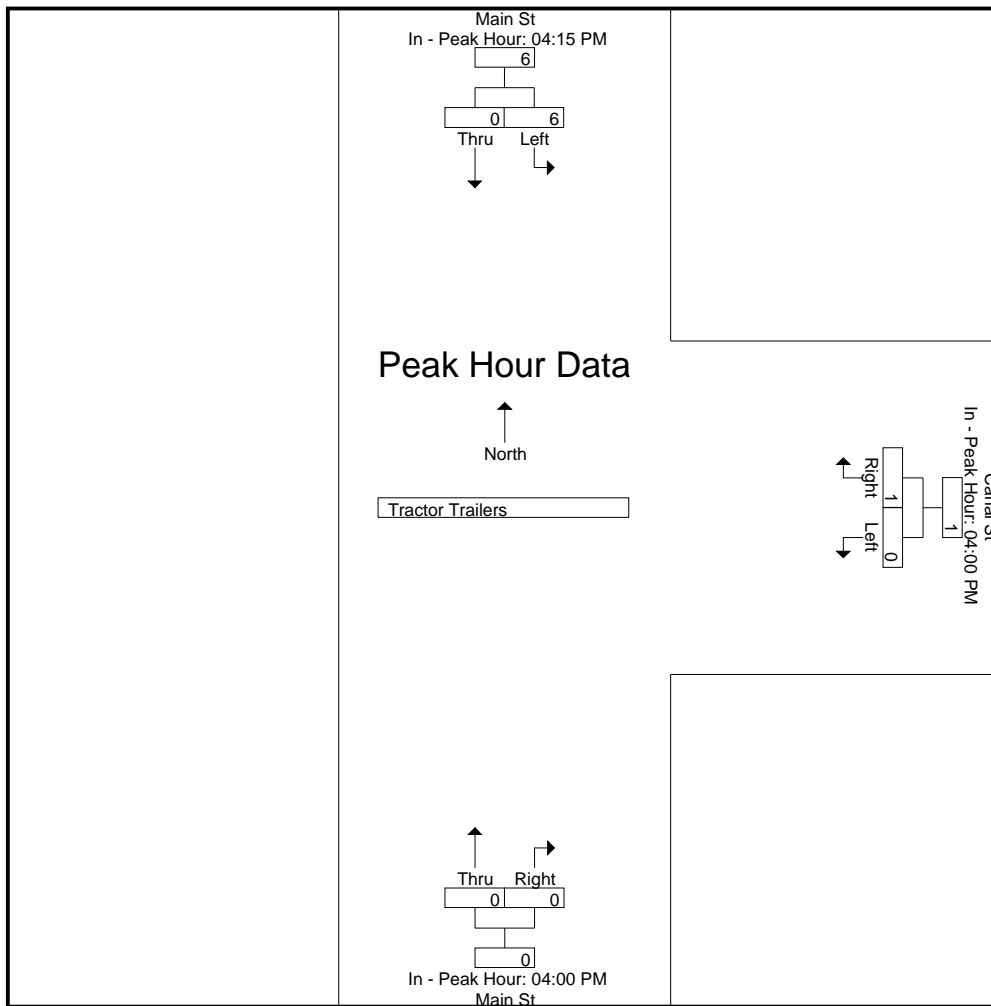
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:15 PM | | | 04:00 PM | | | 04:00 PM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 3 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 |
| +15 mins. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 6 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | | 0 | 100 | | 0 | 0 | |
| PHF | .500 | .000 | .500 | .000 | .250 | .250 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 1

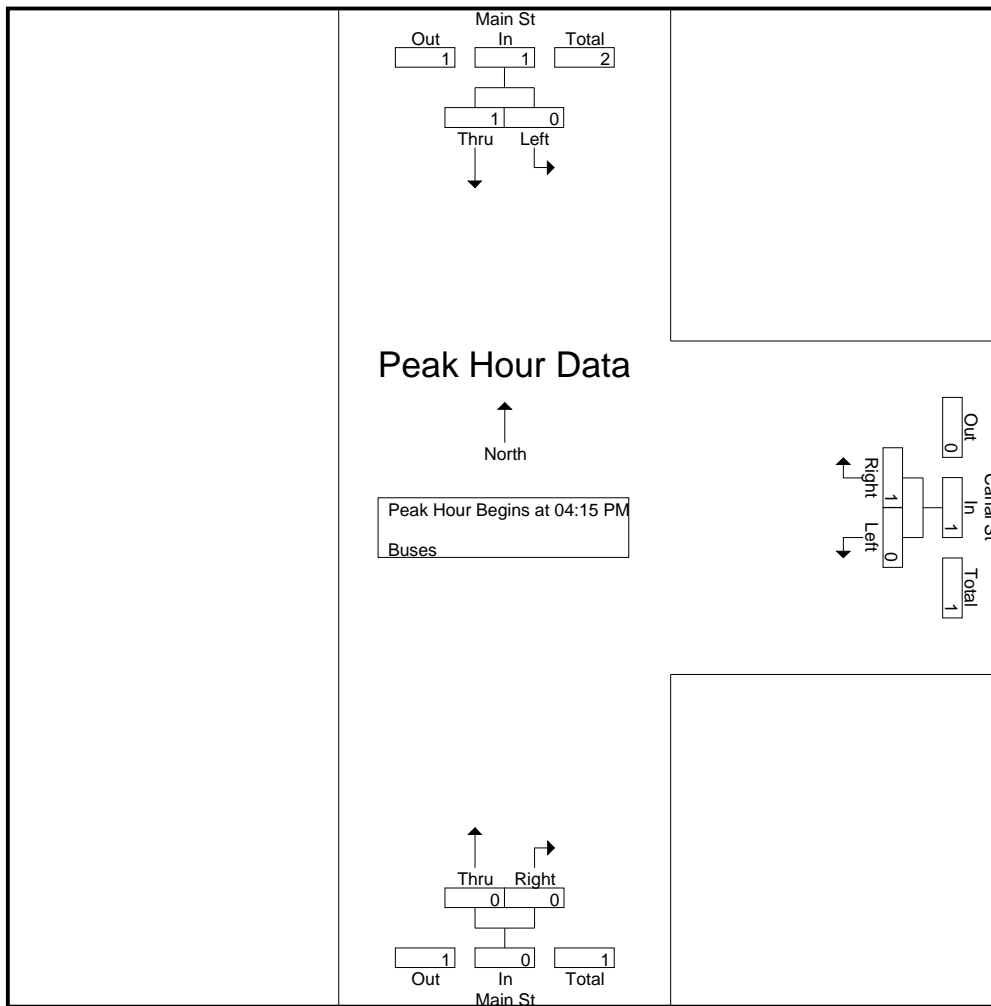
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Buses

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|-------------|--------------------|------|--------------------|-------|--------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Grand Total | 0 | 1 | 0 | 2 | 0 | 0 | 3 |
| Apprch % | 0 | 100 | 0 | 100 | 0 | 0 | |
| Total % | 0 | 33.3 | 0 | 66.7 | 0 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|------|------------|--------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| % App. Total | 0 | 100 | | 0 | 100 | | 0 | 0 | | |
| PHF | .000 | .250 | .250 | .000 | .250 | .250 | .000 | .000 | .000 | .500 |

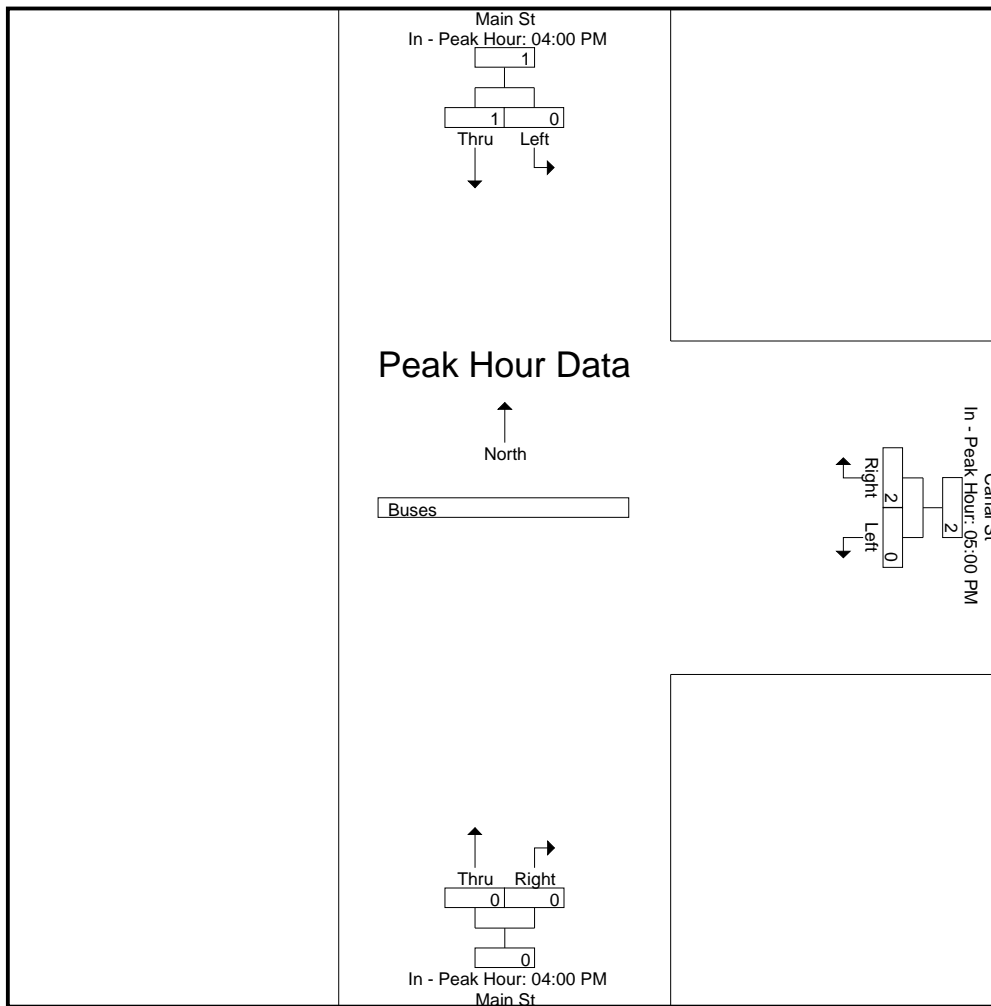
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



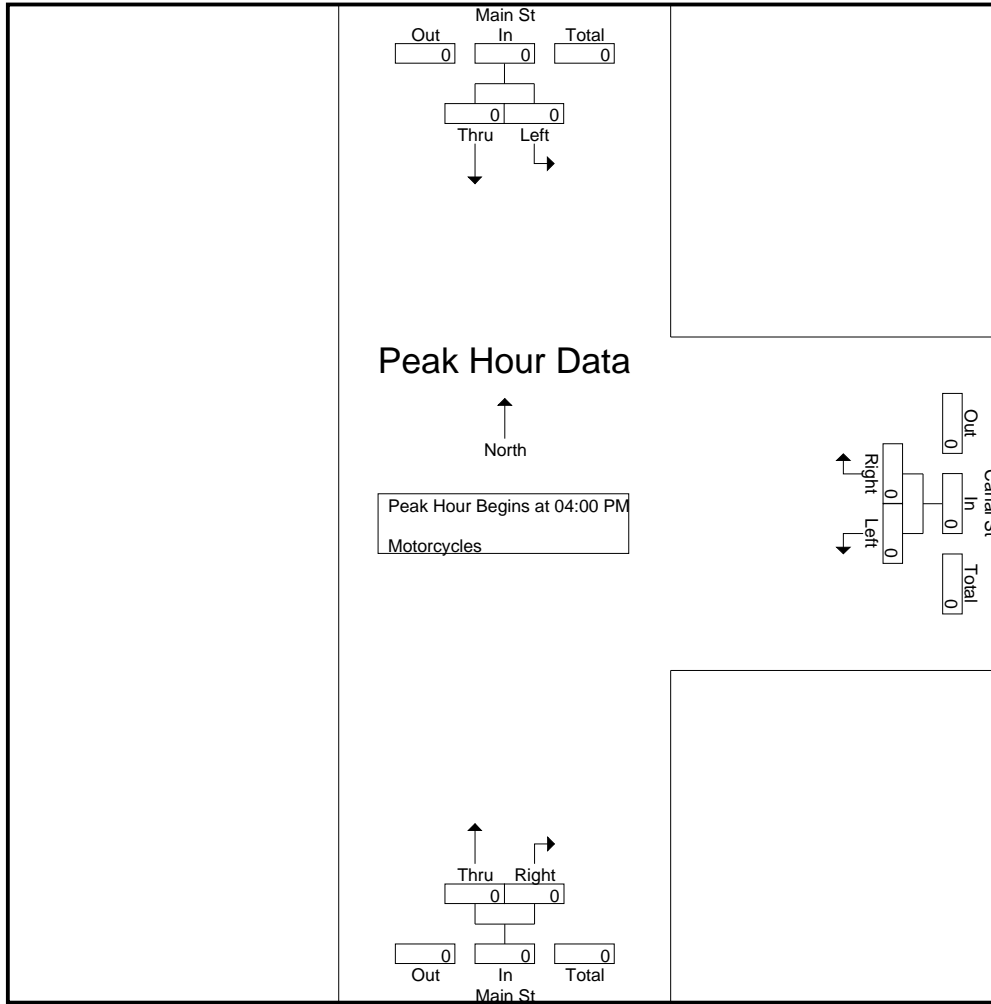
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 05:00 PM | | | 04:00 PM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| Total Volume | 0 | 1 | 1 | 0 | 2 | 2 | 0 | 0 | 0 |
| % App. Total | 0 | 100 | | 0 | 100 | | 0 | 0 | |
| PHF | .000 | .250 | .250 | .000 | .500 | .500 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



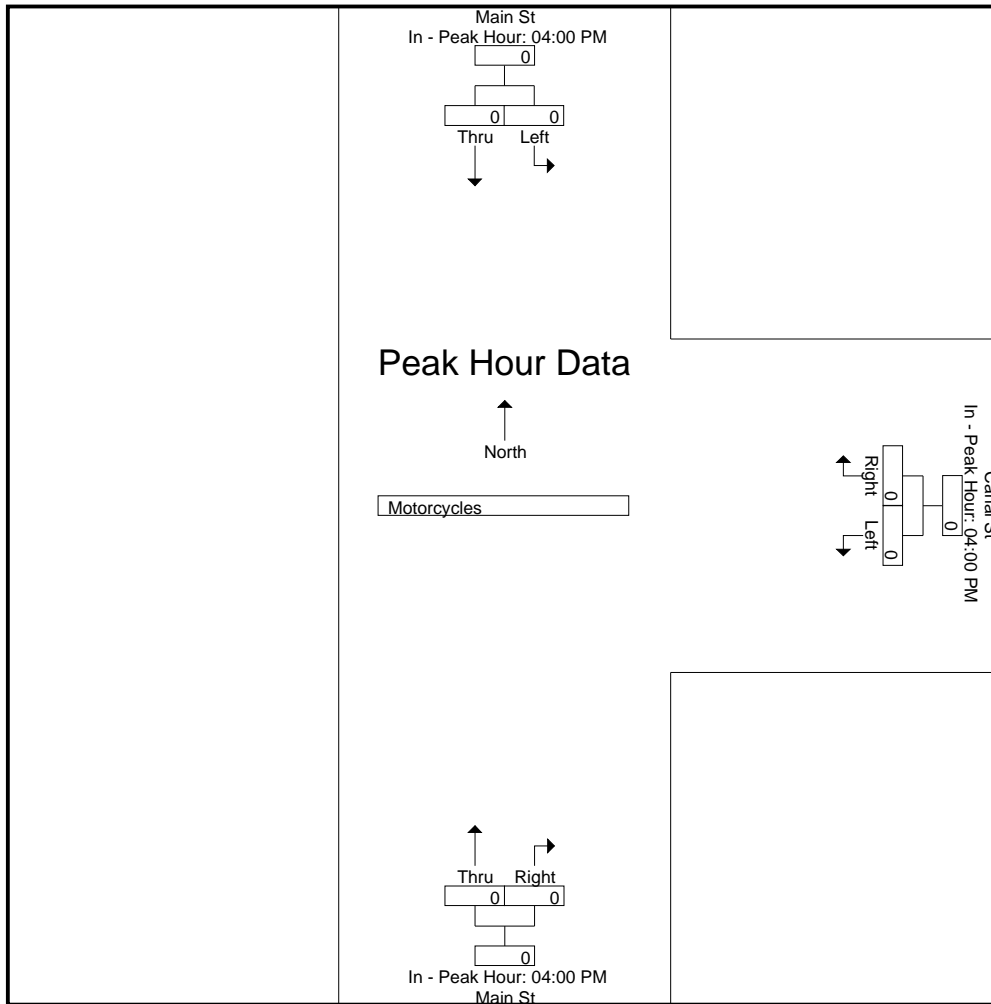
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



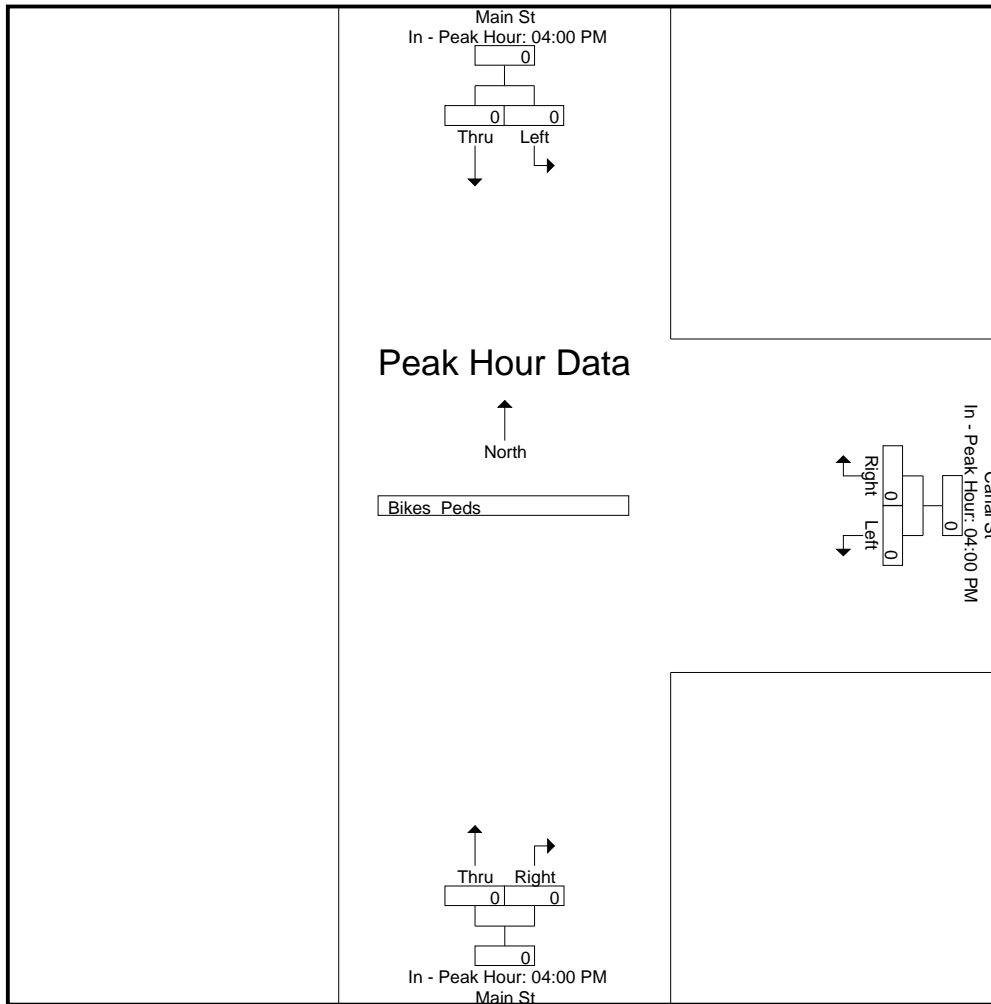
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:00 PM | | | 04:00 PM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



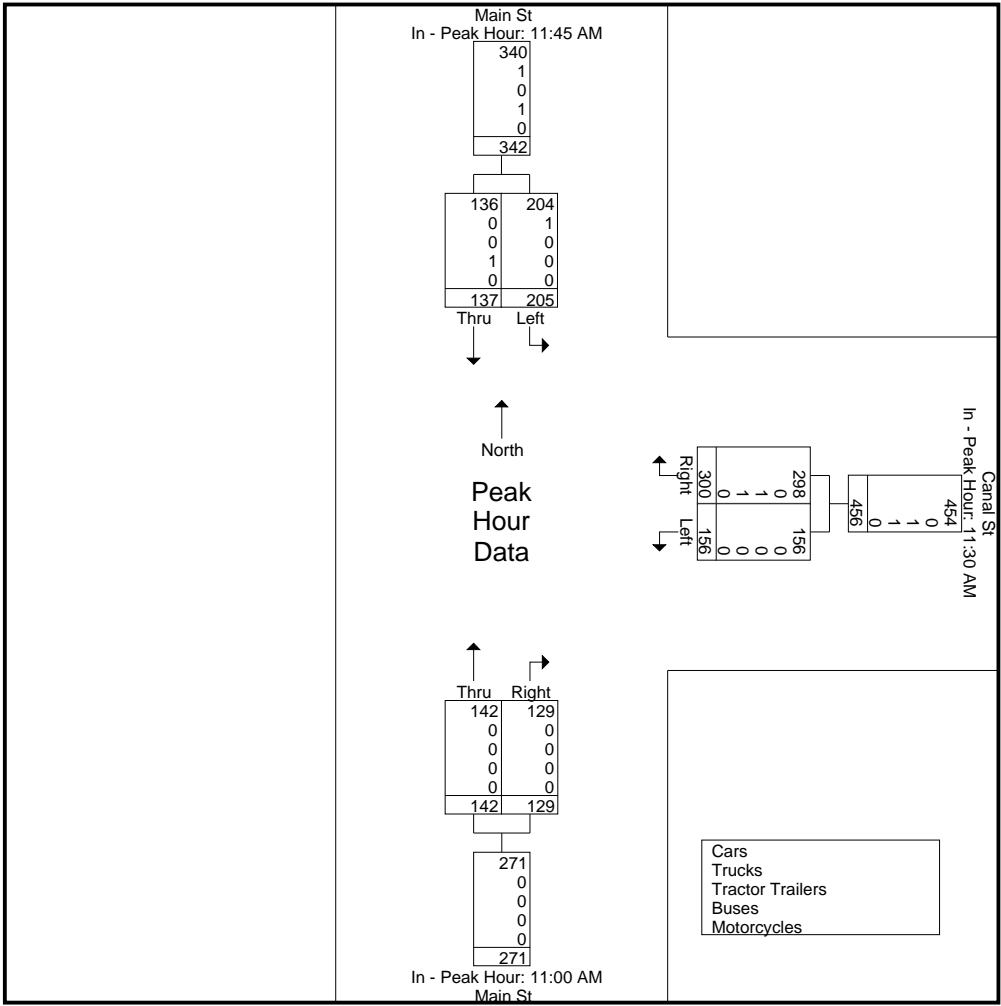
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 3

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 1

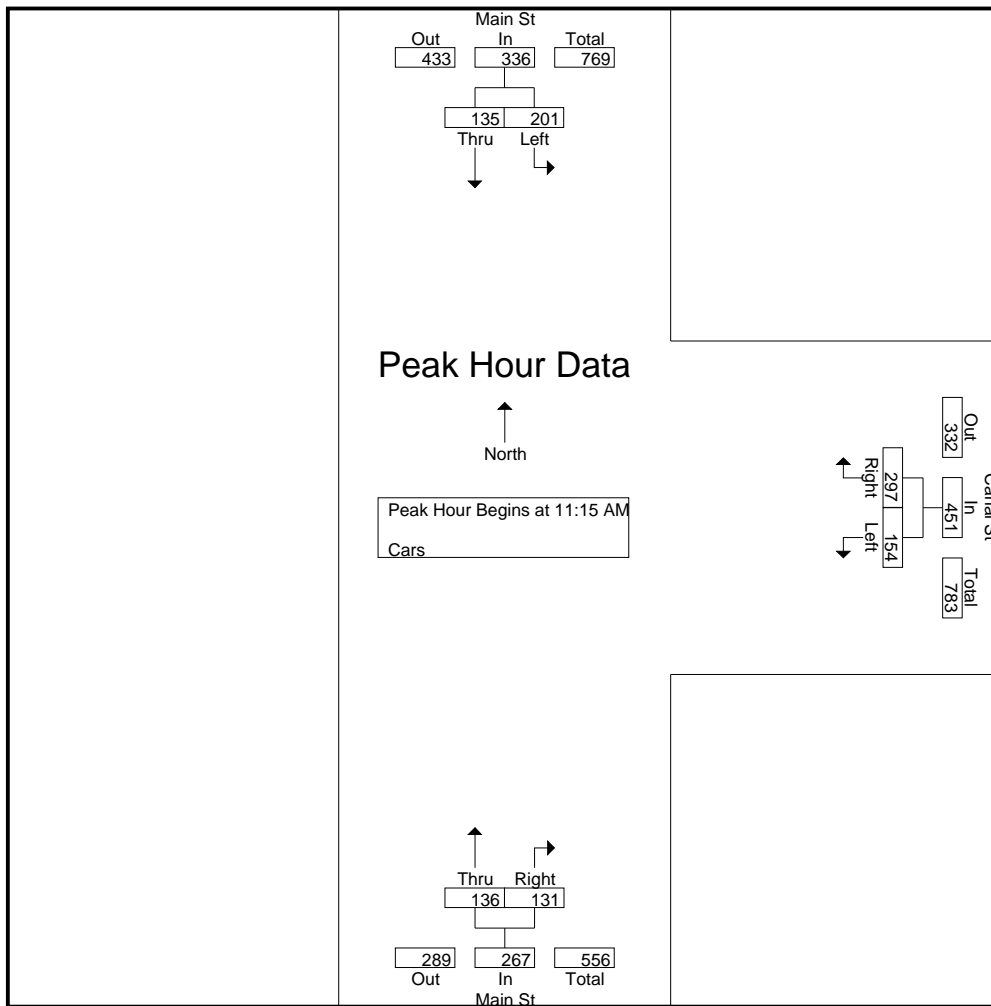
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Cars

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|------------|--------------------|------------|--------------------|------------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 11:00 AM | 47 | 24 | 28 | 81 | 34 | 29 | 243 |
| 11:15 AM | 49 | 42 | 34 | 66 | 32 | 32 | 255 |
| 11:30 AM | 56 | 30 | 34 | 74 | 41 | 38 | 273 |
| 11:45 AM | 48 | 32 | 47 | 86 | 35 | 30 | 278 |
| Total | 200 | 128 | 143 | 307 | 142 | 129 | 1049 |
| 12:00 PM | 48 | 31 | 39 | 71 | 28 | 31 | 248 |
| 12:15 PM | 48 | 38 | 36 | 67 | 21 | 21 | 231 |
| 12:30 PM | 60 | 35 | 21 | 67 | 29 | 30 | 242 |
| 12:45 PM | 50 | 23 | 30 | 52 | 29 | 25 | 209 |
| Total | 206 | 127 | 126 | 257 | 107 | 107 | 930 |
| Grand Total | 406 | 255 | 269 | 564 | 249 | 236 | 1979 |
| Apprch % | 61.4 | 38.6 | 32.3 | 67.7 | 51.3 | 48.7 | |
| Total % | 20.5 | 12.9 | 13.6 | 28.5 | 12.6 | 11.9 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-------------|-------------|--------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | |
| 11:15 AM | 49 | 42 | 91 | 34 | 66 | 100 | 32 | 32 | 64 | 255 |
| 11:30 AM | 56 | 30 | 86 | 34 | 74 | 108 | 41 | 38 | 79 | 273 |
| 11:45 AM | 48 | 32 | 80 | 47 | 86 | 133 | 35 | 30 | 65 | 278 |
| 12:00 PM | 48 | 31 | 79 | 39 | 71 | 110 | 28 | 31 | 59 | 248 |
| Total Volume | 201 | 135 | 336 | 154 | 297 | 451 | 136 | 131 | 267 | 1054 |
| % App. Total | 59.8 | 40.2 | | 34.1 | 65.9 | | 50.9 | 49.1 | | |
| PHF | .897 | .804 | .923 | .819 | .863 | .848 | .829 | .862 | .845 | .948 |

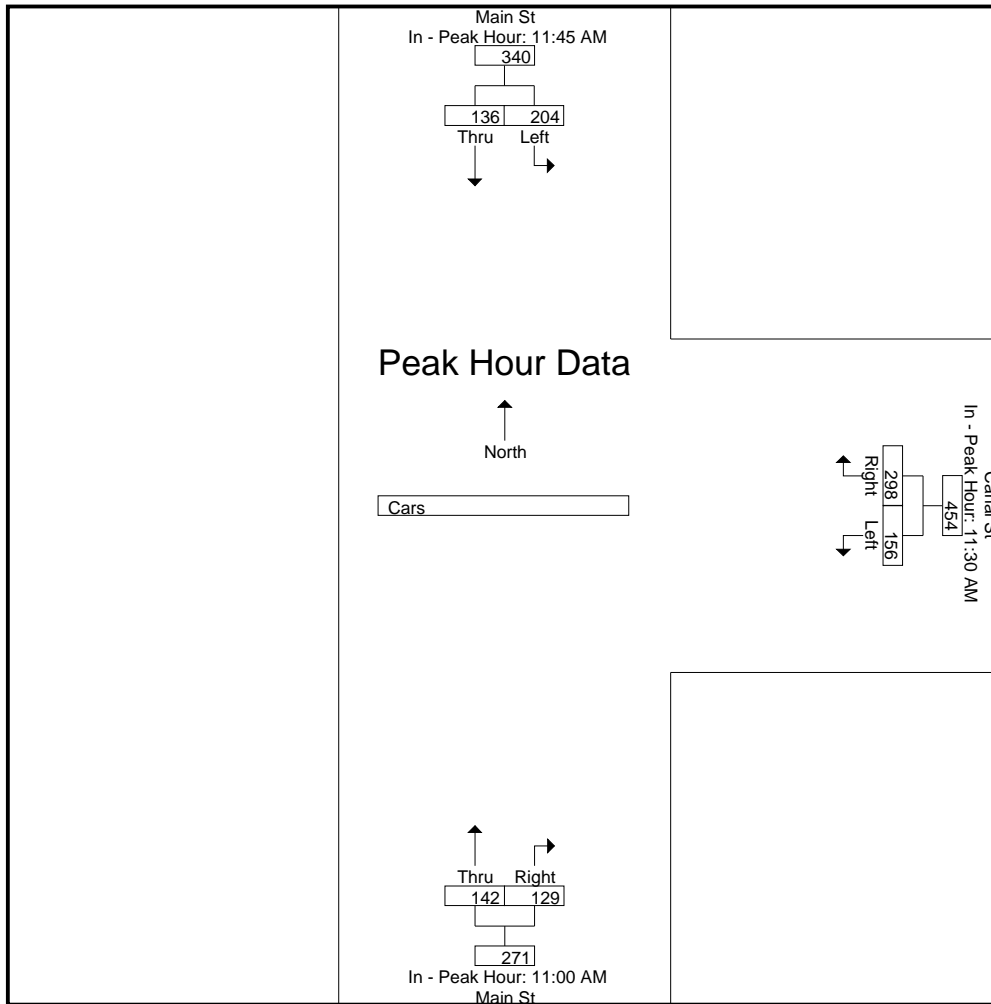
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:45 AM | | | 11:30 AM | | | 11:00 AM | | |
|--------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| +0 mins. | 48 | 32 | 80 | 34 | 74 | 108 | 34 | 29 | 63 |
| +15 mins. | 48 | 31 | 79 | 47 | 86 | 133 | 32 | 32 | 64 |
| +30 mins. | 48 | 38 | 86 | 39 | 71 | 110 | 41 | 38 | 79 |
| +45 mins. | 60 | 35 | 95 | 36 | 67 | 103 | 35 | 30 | 65 |
| Total Volume | 204 | 136 | 340 | 156 | 298 | 454 | 142 | 129 | 271 |
| % App. Total | 60 | 40 | | 34.4 | 65.6 | | 52.4 | 47.6 | |
| PHF | .850 | .895 | .895 | .830 | .866 | .853 | .866 | .849 | .858 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 1

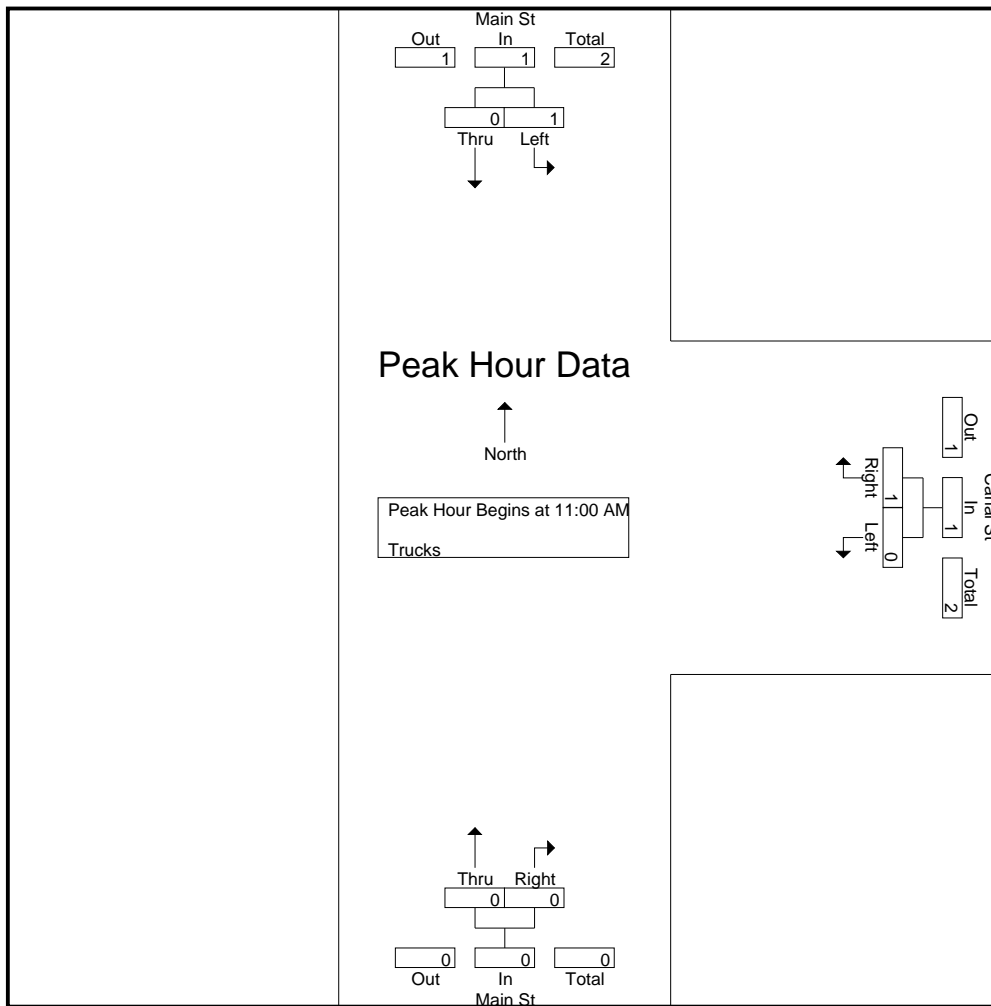
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Trucks

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|----------|--------------------|----------|--------------------|----------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| Apprch % | 100 | 0 | 0 | 100 | 0 | 0 | |
| Total % | 50 | 0 | 0 | 50 | 0 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-------------|-------------|--------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| % App. Total | 100 | 0 | 100 | 0 | 100 | 100 | 0 | 0 | 0 | 100 |
| PHF | .250 | .000 | .250 | .000 | .250 | .250 | .000 | .000 | .000 | .500 |

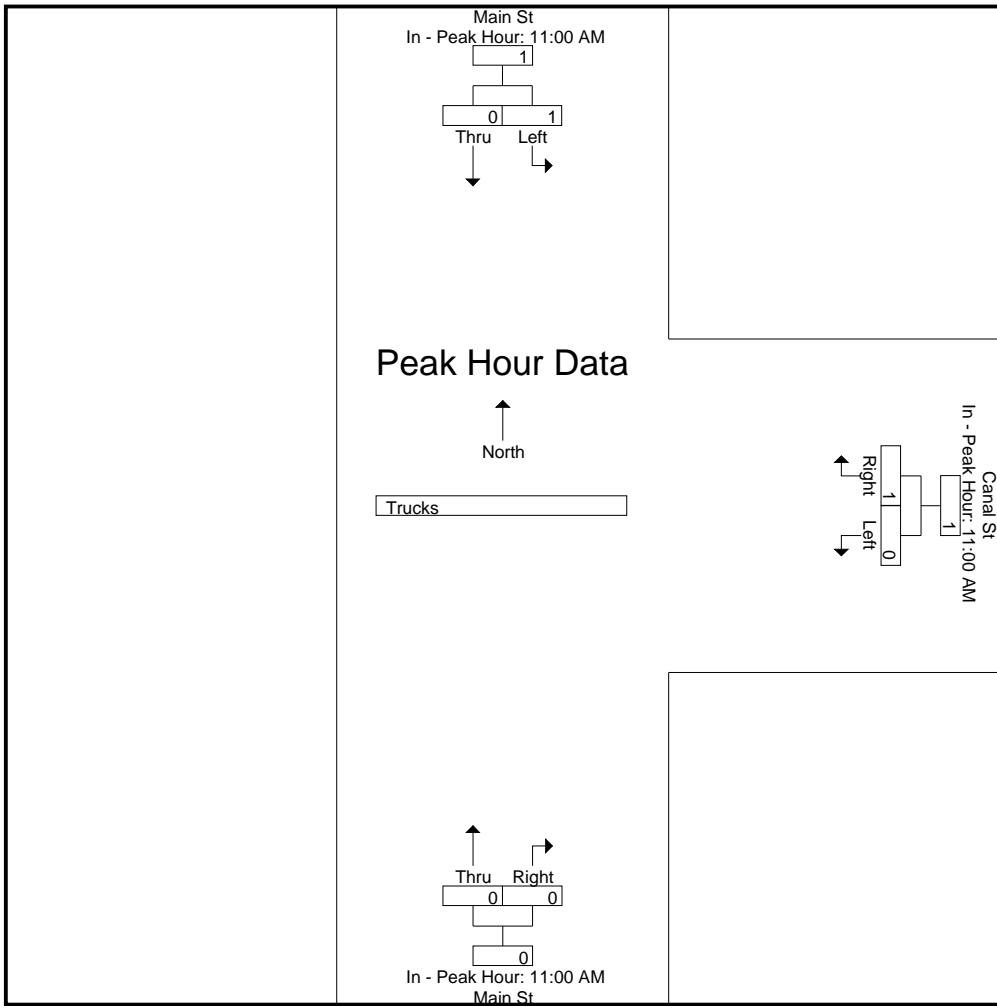
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | 11:00 AM | | | 11:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | | 0 | 100 | | 0 | 0 | |
| PHF | .250 | .000 | .250 | .000 | .250 | .250 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 1

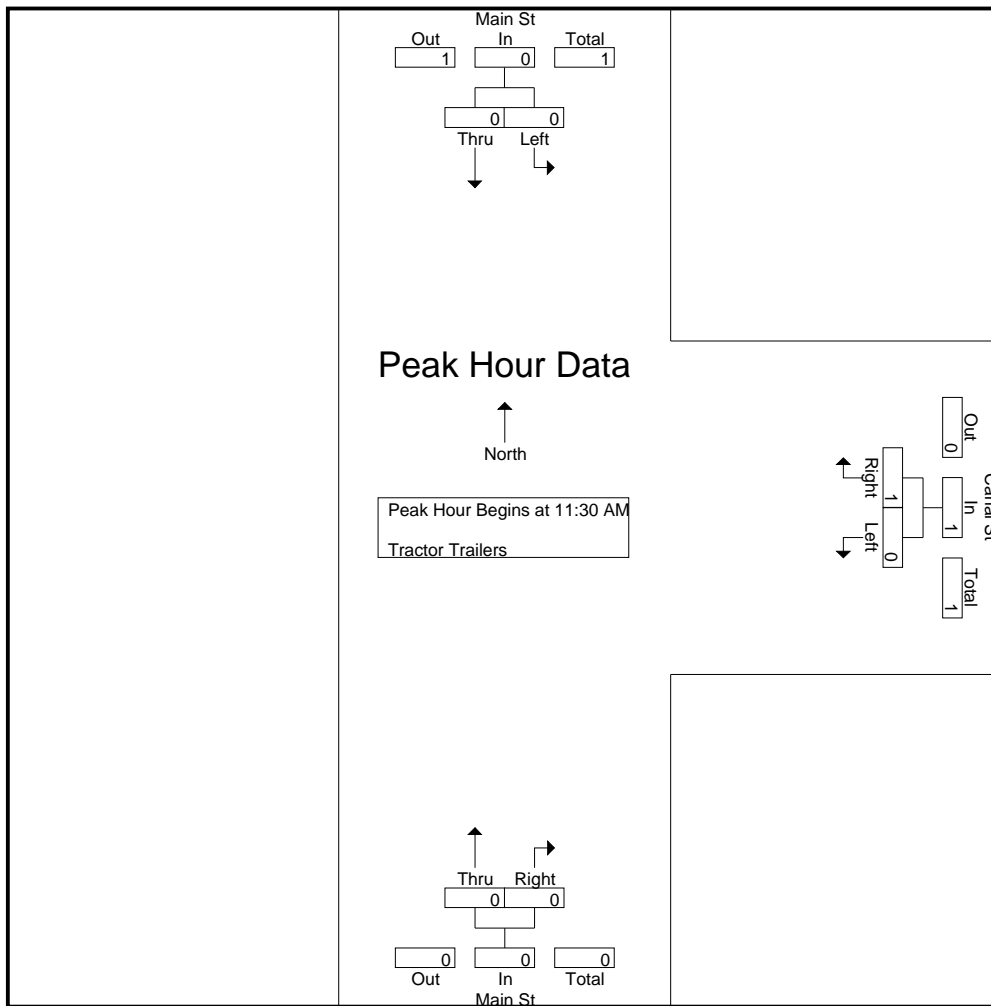
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Tractor Trailers

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|-------------|--------------------|------|--------------------|-------|--------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Apprch % | 0 | 0 | 0 | 100 | 0 | 0 | |
| Total % | 0 | 0 | 0 | 100 | 0 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|------|------------|--------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:30 AM | | | | | | | | | | |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | | 0 | 100 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .250 |

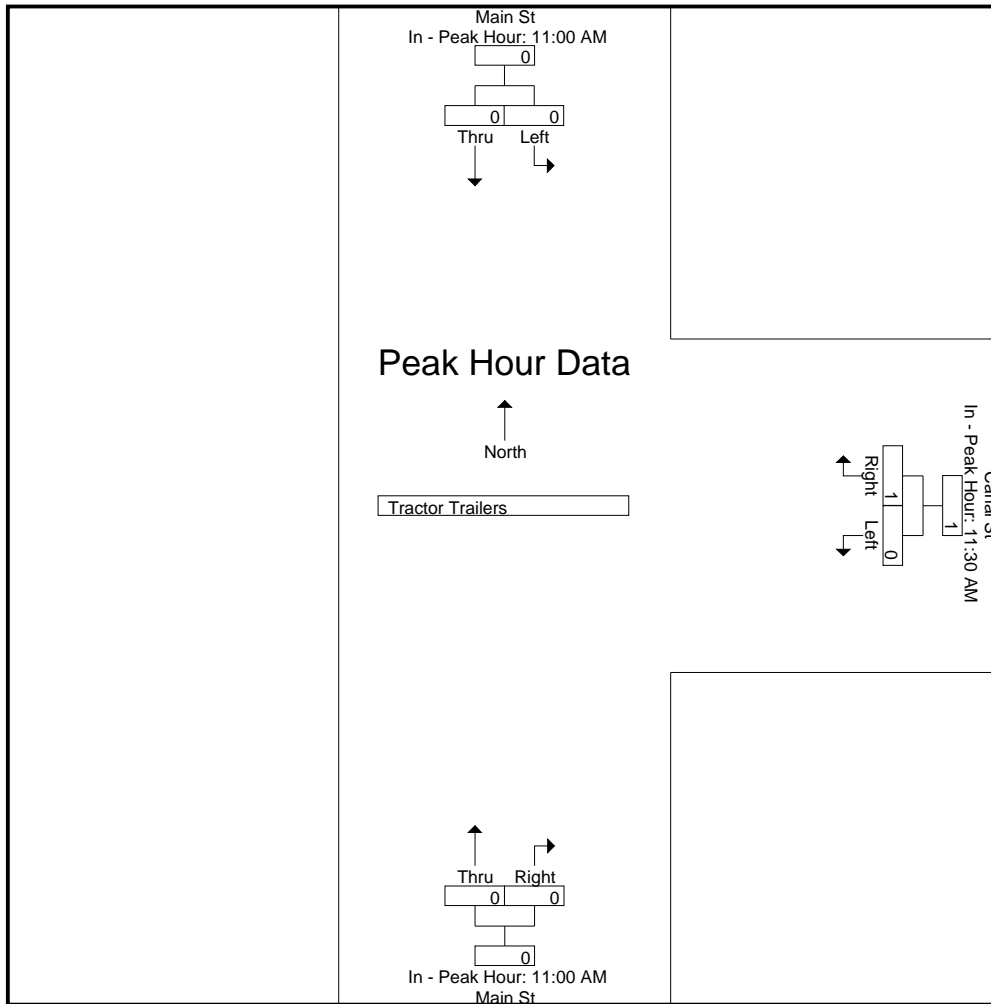
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | 11:30 AM | | | 11:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 1

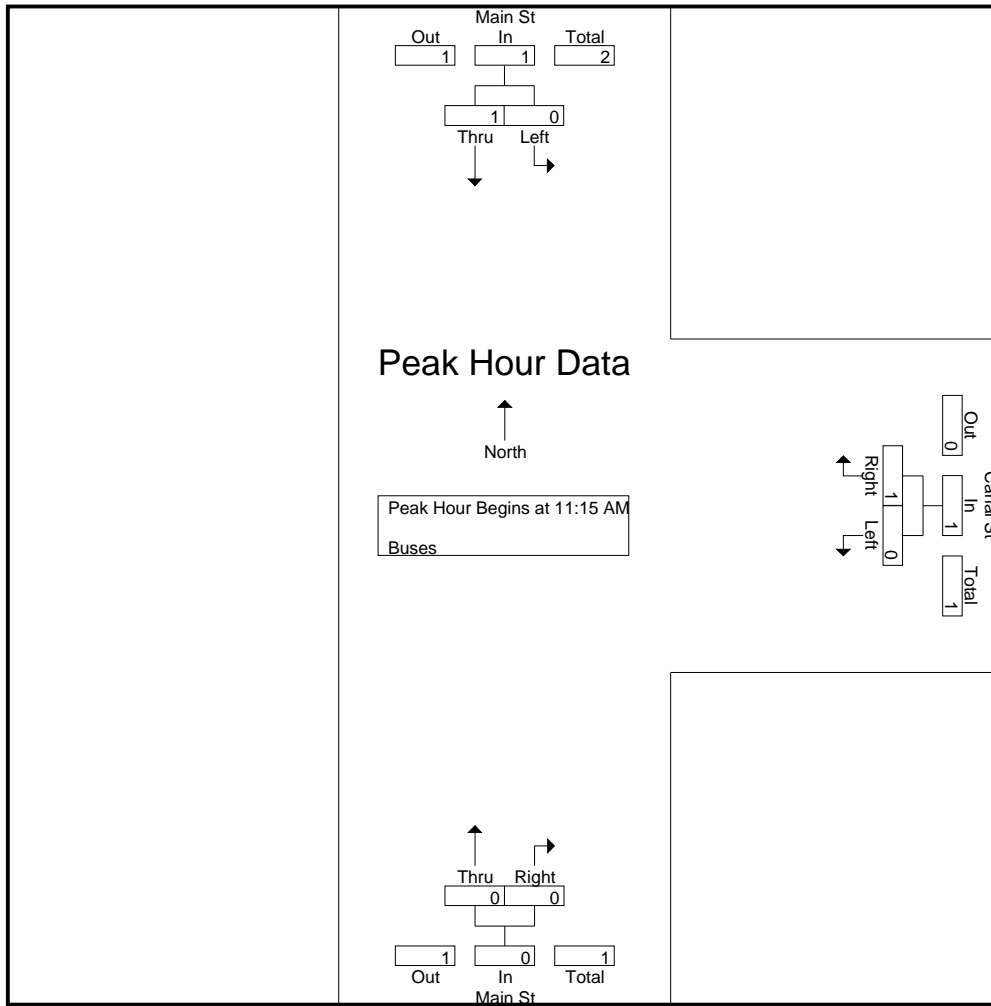
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Buses

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|-------------|--------------------|------|--------------------|-------|--------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| Grand Total | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| Apprch % | 0 | 100 | 0 | 100 | 0 | 0 | |
| Total % | 0 | 50 | 0 | 50 | 0 | 0 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|------|------------|--------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| % App. Total | 0 | 100 | | 0 | 100 | | 0 | 0 | | |
| PHF | .000 | .250 | .250 | .000 | .250 | .250 | .000 | .000 | .000 | .250 |

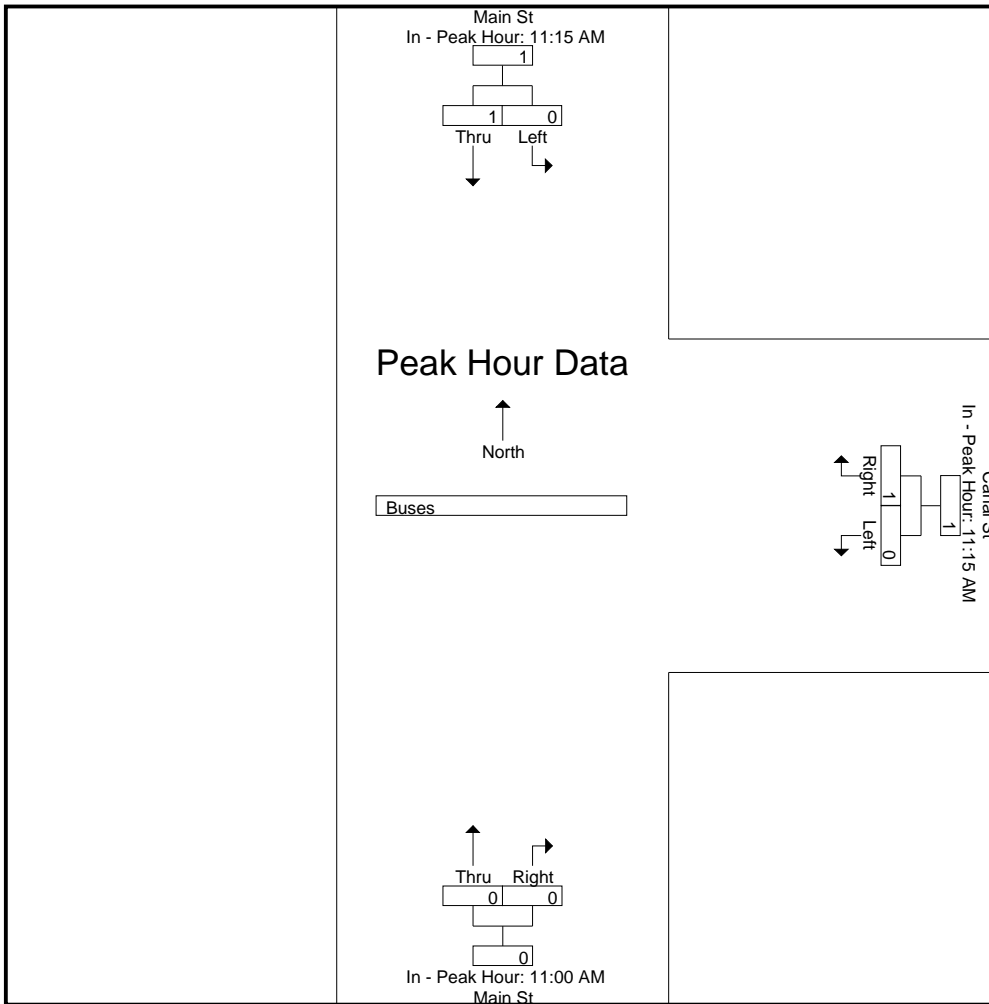
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



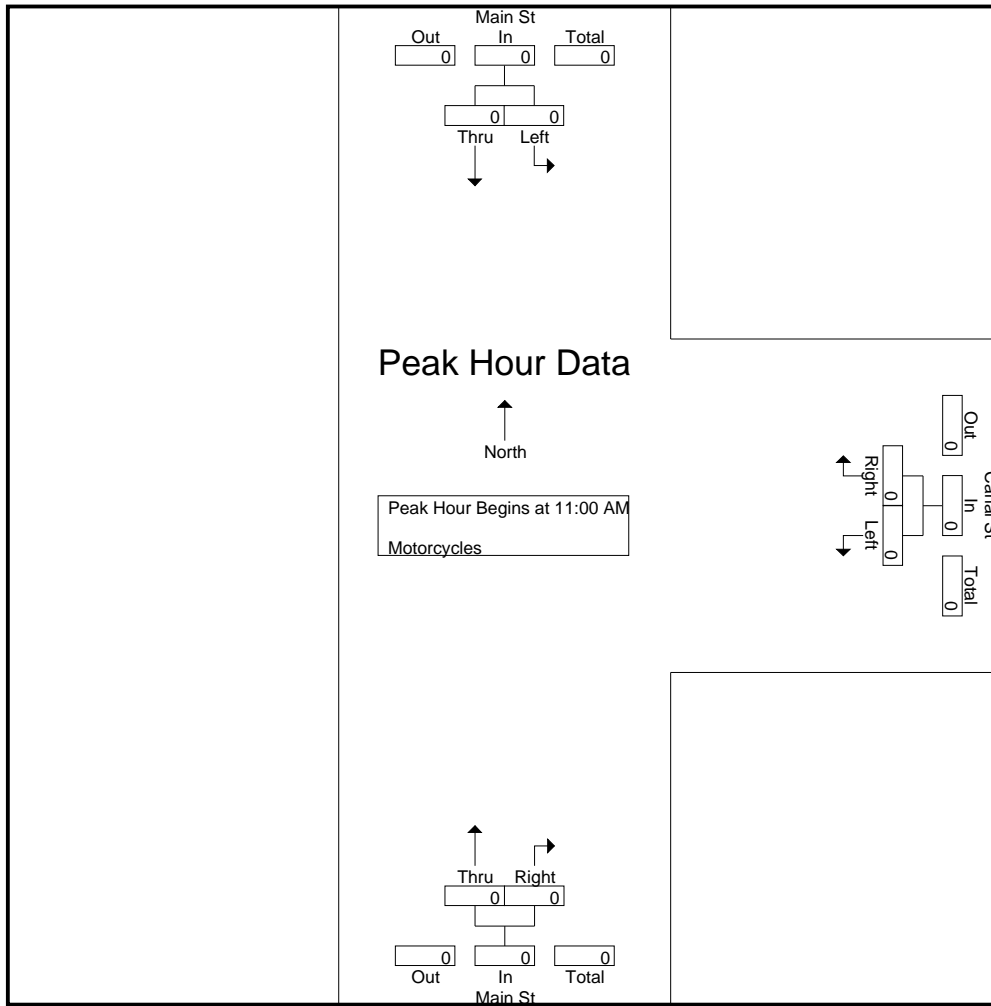
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | 11:15 AM | | | 11:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| Total Volume | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| % App. Total | 0 | 100 | | 0 | 100 | | 0 | 0 | |
| PHF | .000 | .250 | .250 | .000 | .250 | .250 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



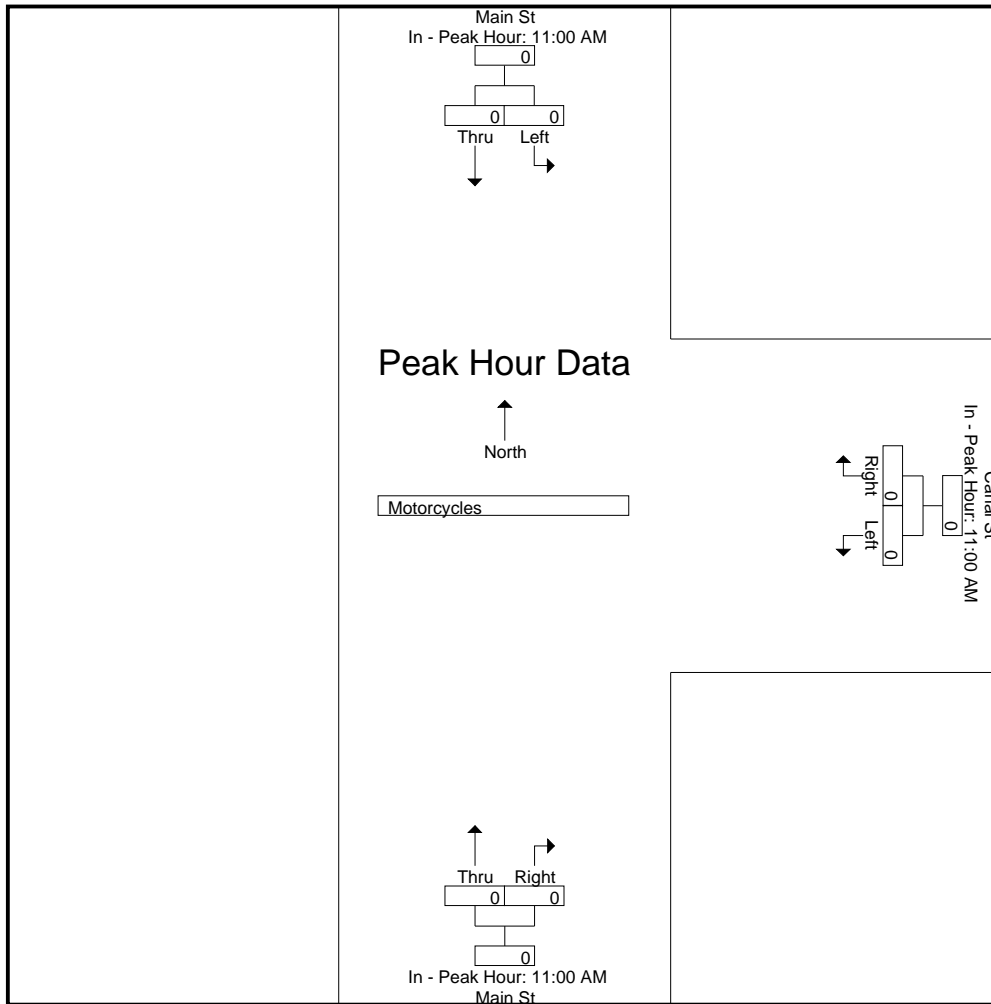
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | 11:00 AM | | | 11:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 1

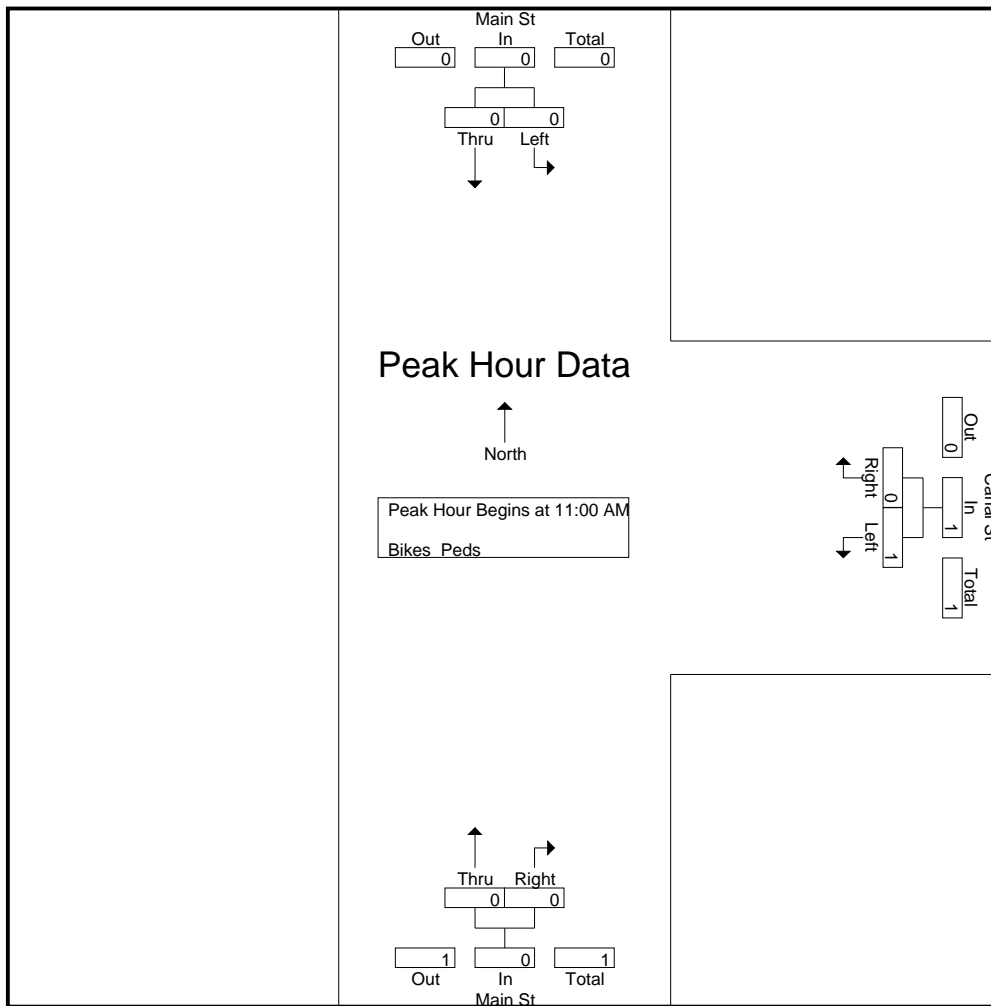
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Bikes Peds

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-----------------------|------|------|-----------------------|-------|------|-----------------------|-------|------|--------------|--------------|------------|
| | Left | Thru | Peds | Left | Right | Peds | Thru | Right | Peds | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 4 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 5 | 1 | 6 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 5 | 1 | 6 |
| Apprch % | 0 | 0 | | 100 | 0 | | 0 | 0 | | | | |
| Total % | 0 | 0 | | 100 | 0 | | 0 | 0 | | 83.3 | 16.7 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|-----------------------|------|------------|-----------------------|-------|------------|-----------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | | 100 | 0 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .250 |

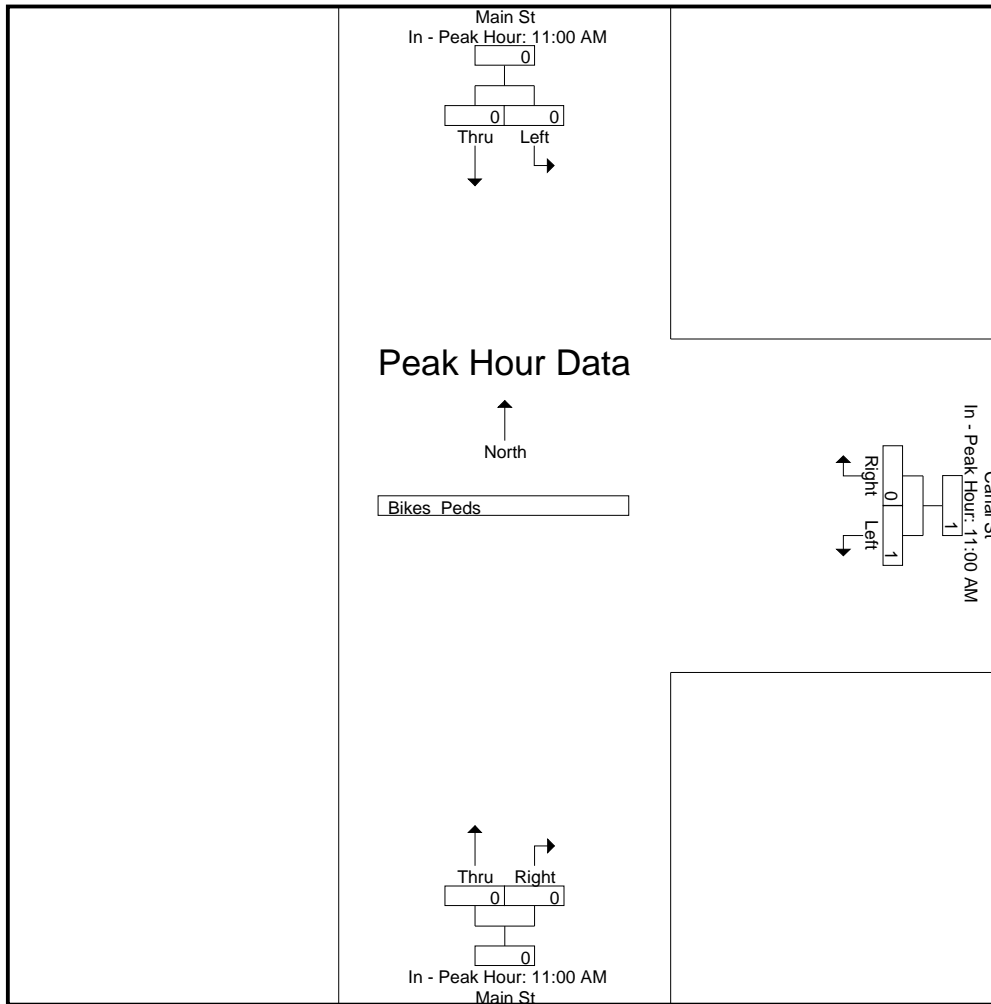
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



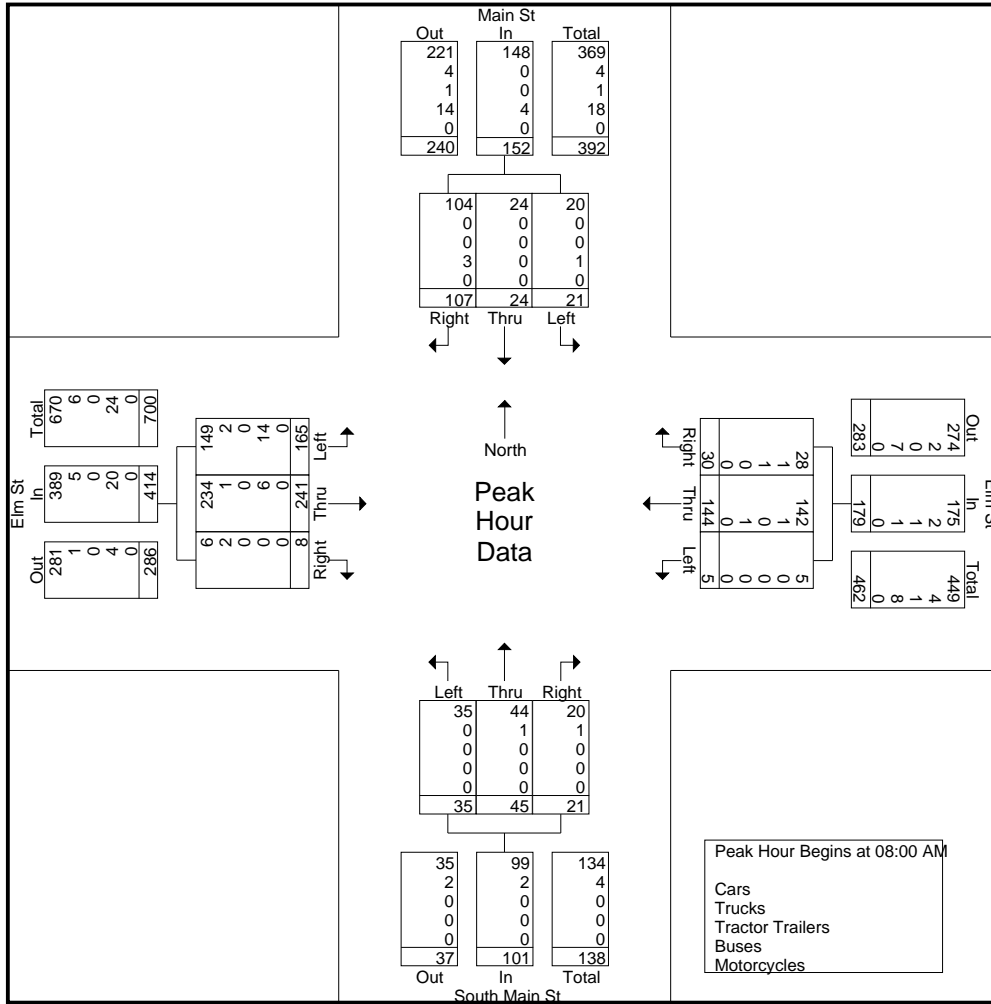
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | 11:00 AM | | | 11:00 AM | | |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain



N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



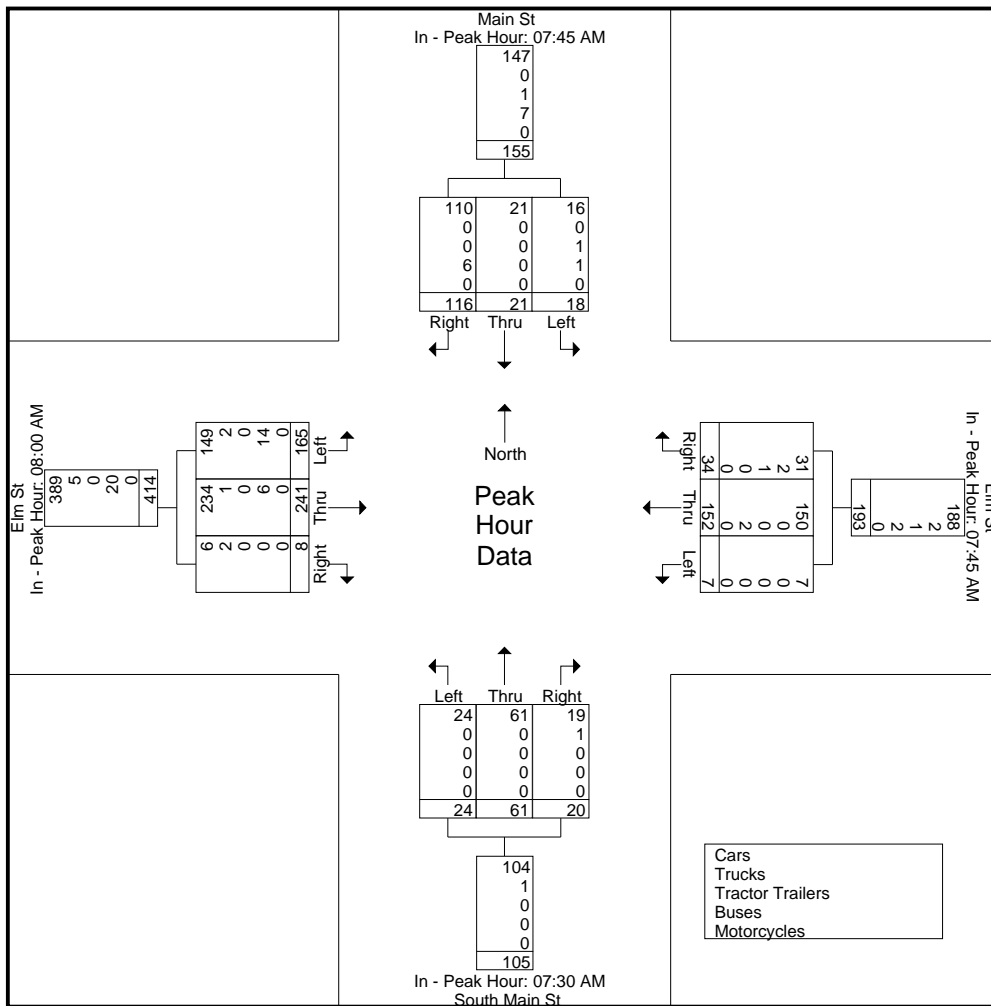
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:45 AM | | | | 07:30 AM | | | | 08:00 AM | | | | | | | |
|--------------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|------|------|------|------|
| +0 mins. | 4 | 5 | 36 | 45 | 3 | 41 | 11 | 55 | 6 | 25 | 3 | 34 | 50 | 57 | 1 | 108 |
| +15 mins. | 3 | 6 | 22 | 31 | 1 | 29 | 10 | 40 | 4 | 14 | 2 | 20 | 33 | 54 | 4 | 91 |
| +30 mins. | 5 | 4 | 22 | 31 | 3 | 43 | 6 | 52 | 7 | 10 | 6 | 23 | 39 | 73 | 2 | 114 |
| +45 mins. | 6 | 6 | 36 | 48 | 0 | 39 | 7 | 46 | 7 | 12 | 9 | 28 | 43 | 57 | 1 | 101 |
| Total Volume | 18 | 21 | 116 | 155 | 7 | 152 | 34 | 193 | 24 | 61 | 20 | 105 | 165 | 241 | 8 | 414 |
| % App. Total | 11.6 | 13.5 | 74.8 | | 3.6 | 78.8 | 17.6 | | 22.9 | 58.1 | 19 | | 39.9 | 58.2 | 1.9 | |
| PHF | .750 | .875 | .806 | .807 | .583 | .884 | .773 | .877 | .857 | .610 | .556 | .772 | .825 | .825 | .500 | .908 |
| Cars | 16 | 21 | 110 | 147 | 7 | 150 | 31 | 188 | 24 | 61 | 19 | 104 | 149 | 234 | 6 | 389 |
| % Cars | 88.9 | 100 | 94.8 | 94.8 | 100 | 98.7 | 91.2 | 97.4 | 100 | 100 | 95 | 99 | 90.3 | 97.1 | 75 | 94 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 2 | 5 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 5.9 | 1 | 0 | 0 | 5 | 1 | 1.2 | 0.4 | 25 | 1.2 |
| Tractor Trailers | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Tractor Trailers | 5.6 | 0 | 0 | 0.6 | 0 | 0 | 2.9 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses | 1 | 0 | 6 | 7 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 14 | 6 | 0 | 20 |
| % Buses | 5.6 | 0 | 5.2 | 4.5 | 0 | 1.3 | 0 | 1 | 0 | 0 | 0 | 0 | 8.5 | 2.5 | 0 | 4.8 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 3

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Main Street
 E/W Street : Canal Street
 City/State : Millbury, MA
 Weather : Clear

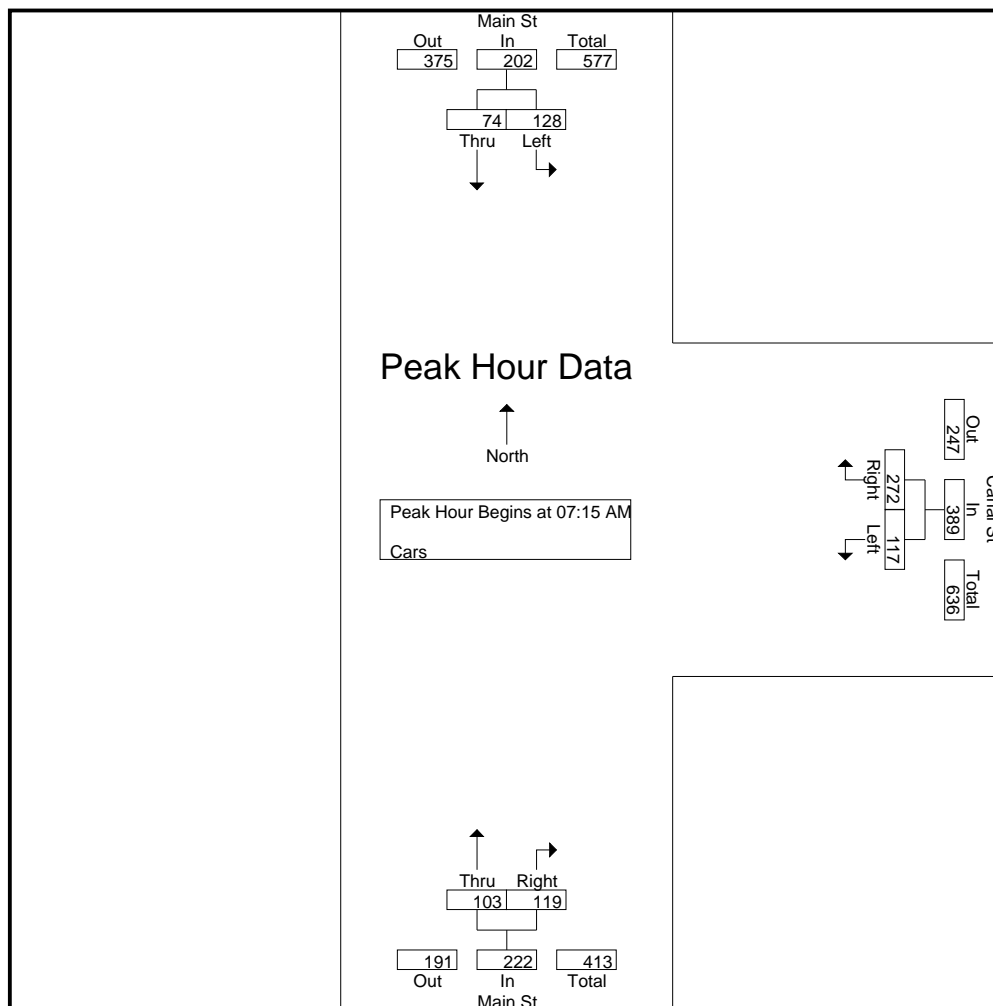
File Name : 18760004
 Site Code : 18760004
 Start Date : 2/25/2021
 Page No : 1

Groups Printed- Cars

| Start Time | Main St From North | | Canal St From East | | Main St From South | | Int. Total |
|--------------------|--------------------|------------|--------------------|------------|--------------------|------------|-------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 31 | 8 | 12 | 51 | 21 | 13 | 136 |
| 07:15 AM | 35 | 16 | 19 | 72 | 32 | 24 | 198 |
| 07:30 AM | 37 | 25 | 21 | 87 | 41 | 34 | 245 |
| 07:45 AM | 30 | 14 | 44 | 68 | 17 | 23 | 196 |
| Total | 133 | 63 | 96 | 278 | 111 | 94 | 775 |
| 08:00 AM | 26 | 19 | 33 | 45 | 13 | 38 | 174 |
| 08:15 AM | 27 | 23 | 33 | 59 | 16 | 15 | 173 |
| 08:30 AM | 30 | 22 | 32 | 57 | 18 | 25 | 184 |
| 08:45 AM | 24 | 19 | 37 | 50 | 27 | 23 | 180 |
| Total | 107 | 83 | 135 | 211 | 74 | 101 | 711 |
| Grand Total | 240 | 146 | 231 | 489 | 185 | 195 | 1486 |
| Apprch % | 62.2 | 37.8 | 32.1 | 67.9 | 48.7 | 51.3 | |
| Total % | 16.2 | 9.8 | 15.5 | 32.9 | 12.4 | 13.1 | |

| Start Time | Main St From North | | | Canal St From East | | | Main St From South | | | Int. Total |
|--|--------------------|-----------|------------|--------------------|-----------|------------|--------------------|-----------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | |
| 07:15 AM | 35 | 16 | 51 | 19 | 72 | 91 | 32 | 24 | 56 | 198 |
| 07:30 AM | 37 | 25 | 62 | 21 | 87 | 108 | 41 | 34 | 75 | 245 |
| 07:45 AM | 30 | 14 | 44 | 44 | 68 | 112 | 17 | 23 | 40 | 196 |
| 08:00 AM | 26 | 19 | 45 | 33 | 45 | 78 | 13 | 38 | 51 | 174 |
| Total Volume | 128 | 74 | 202 | 117 | 272 | 389 | 103 | 119 | 222 | 813 |
| % App. Total | 63.4 | 36.6 | | 30.1 | 69.9 | | 46.4 | 53.6 | | |
| PHF | .865 | .740 | .815 | .665 | .782 | .868 | .628 | .783 | .740 | .830 |

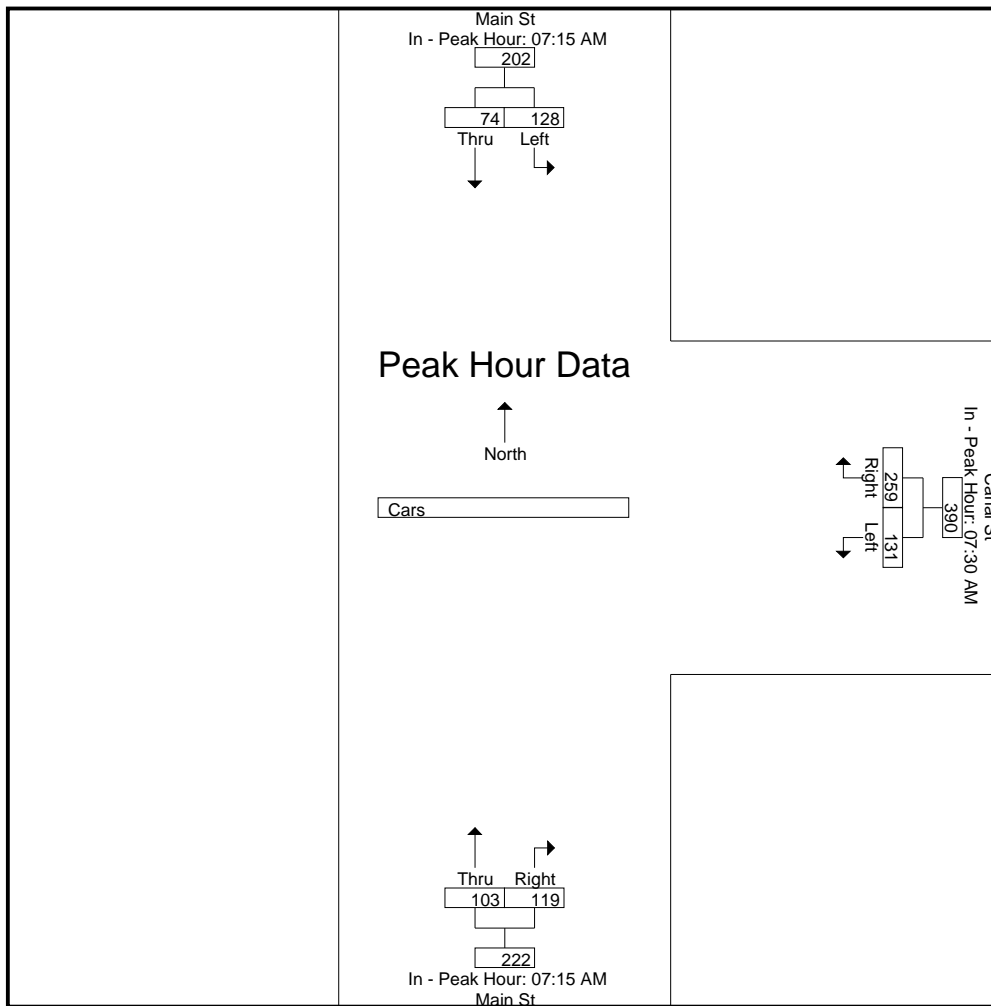
N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | 07:30 AM | | | 07:15 AM | | |
|--------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| +0 mins. | 35 | 16 | 51 | 21 | 87 | 108 | 32 | 24 | 56 |
| +15 mins. | 37 | 25 | 62 | 44 | 68 | 112 | 41 | 34 | 75 |
| +30 mins. | 30 | 14 | 44 | 33 | 45 | 78 | 17 | 23 | 40 |
| +45 mins. | 26 | 19 | 45 | 33 | 59 | 92 | 13 | 38 | 51 |
| Total Volume | 128 | 74 | 202 | 131 | 259 | 390 | 103 | 119 | 222 |
| % App. Total | 63.4 | 36.6 | | 33.6 | 66.4 | | 46.4 | 53.6 | |
| PHF | .865 | .740 | .815 | .744 | .744 | .871 | .628 | .783 | .740 |

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

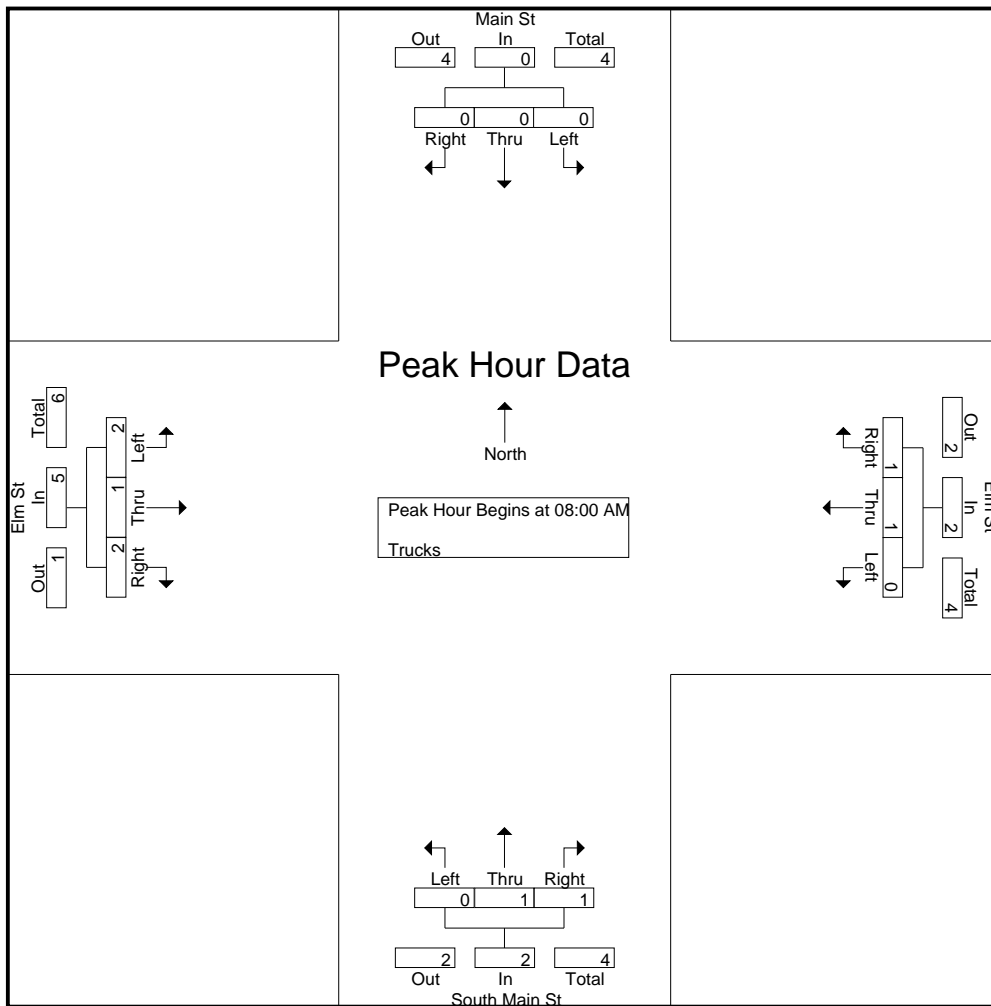
File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 1

Groups Printed- Trucks

| Start Time | Main St From North | | | Elm St From East | | | South Main St From South | | | Elm St From West | | | Int. Total |
|--------------------|--------------------|----------|----------|------------------|----------|----------|--------------------------|----------|----------|------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 |
| 07:15 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 07:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 8 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 4 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 2 | 9 |
| Grand Total | 0 | 1 | 4 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 2 | 2 | 17 |
| Apprch % | 0 | 20 | 80 | 0 | 50 | 50 | 0 | 50 | 50 | 33.3 | 33.3 | 33.3 | |
| Total % | 0 | 5.9 | 23.5 | 0 | 11.8 | 11.8 | 0 | 5.9 | 5.9 | 11.8 | 11.8 | 11.8 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total | |
|--|--------------------|----------|----------|------------|------------------|----------|----------|------------|--------------------------|----------|----------|------------|------------------|----------|----------|------------|------------|---|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 3 | 4 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 2 | 1 | 2 | 5 | 9 | |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 50 | 50 | 50 | 0 | 50 | 50 | 50 | 40 | 20 | 40 | | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .500 | .000 | .250 | .250 | .500 | .250 | .250 | .500 | .417 | .563 | |

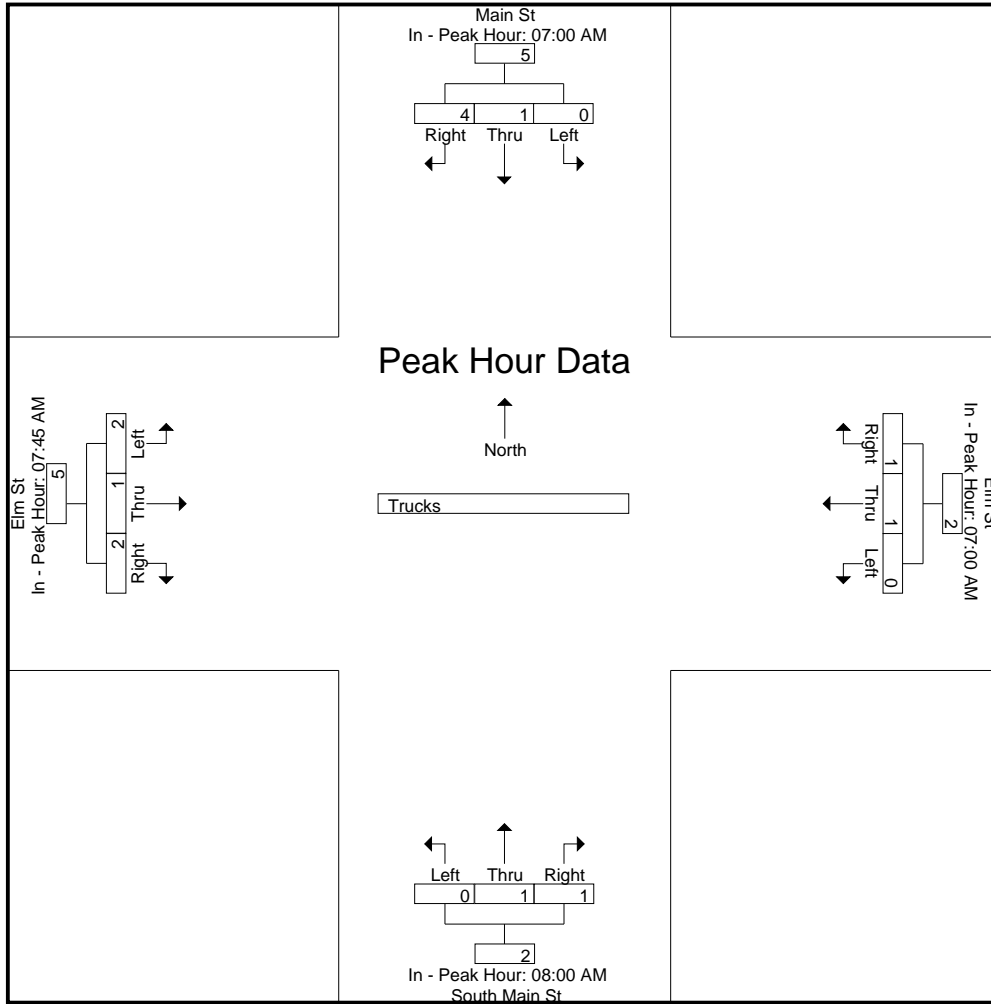
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



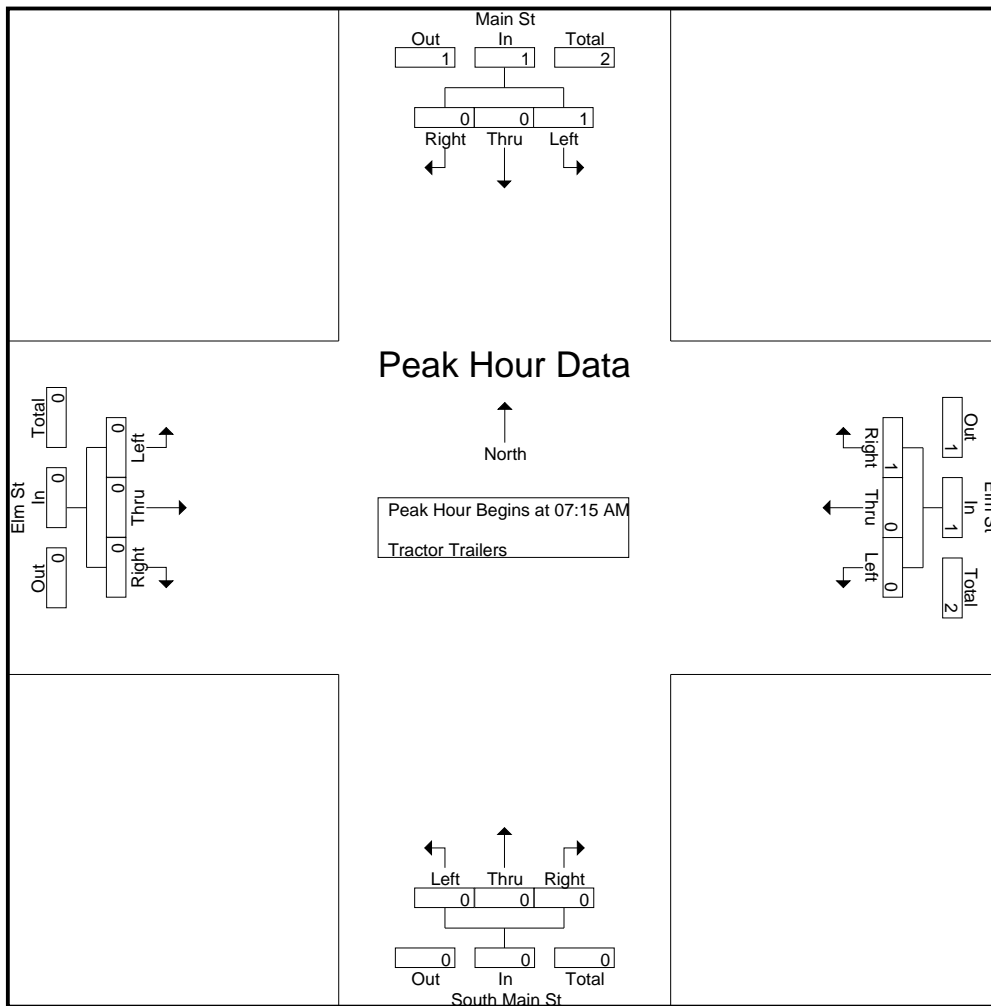
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 08:00 AM | | | | 07:45 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 3 |
| +30 mins. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 1 | 4 | 5 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 2 | 1 | 2 | 5 |
| % App. Total | 0 | 20 | 80 | | 0 | 50 | 50 | | 0 | 50 | 50 | | 40 | 20 | 40 | |
| PHF | .000 | .250 | .500 | .625 | .000 | .250 | .250 | .500 | .000 | .250 | .250 | .500 | .250 | .250 | .500 | .417 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



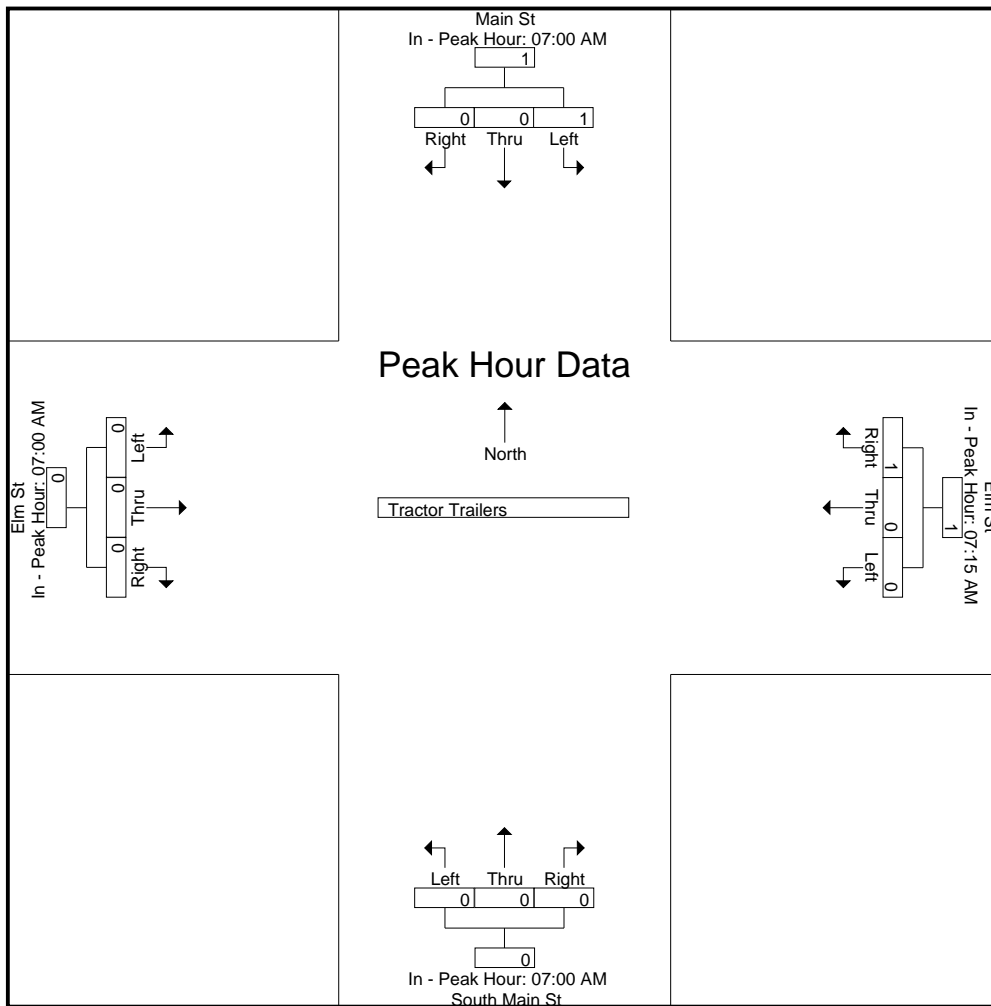
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:15 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

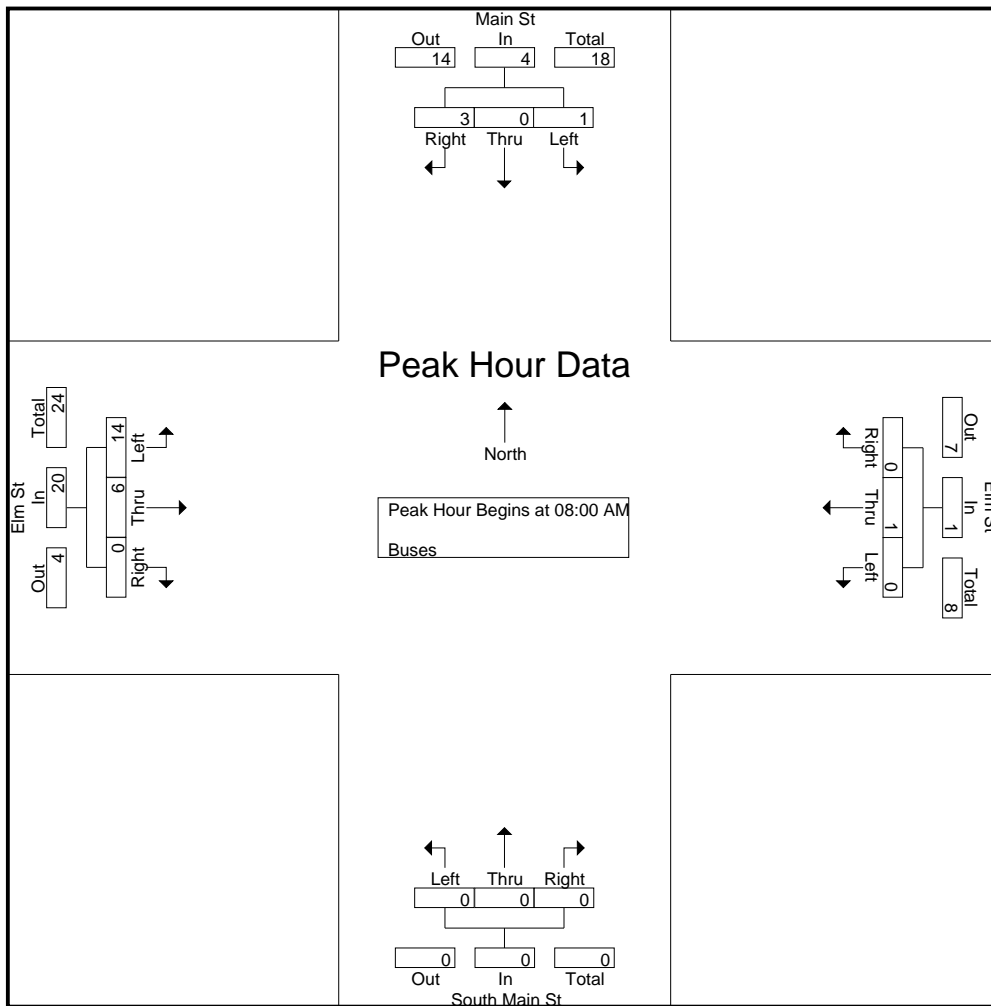
File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 1

Groups Printed- Buses

| Start Time | Main St From North | | | Elm St From East | | | South Main St From South | | | Elm St From West | | | Int. Total |
|--------------------|-----------------------|----------|----------|---------------------|----------|----------|-----------------------------|----------|----------|---------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 07:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:45 AM | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 8 |
| 08:00 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | 10 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| 08:30 AM | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 |
| Total | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | 6 | 0 | 25 |
| Grand Total | 1 | 1 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 15 | 8 | 0 | 33 |
| Apprch % | 12.5 | 12.5 | 75 | 0 | 100 | 0 | 0 | 0 | 0 | 65.2 | 34.8 | 0 | |
| Total % | 3 | 3 | 18.2 | 0 | 6.1 | 0 | 0 | 0 | 0 | 45.5 | 24.2 | 0 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total | |
|--|-----------------------|----------|-----------|------------|---------------------|------------|----------|------------|-----------------------------|----------|----------|------------|---------------------|-----------|----------|------------|------------|-----------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | 9 | 10 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| 08:30 AM | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 6 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 6 |
| Total Volume | 1 | 0 | 3 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | 0 | 20 | 25 |
| % App. Total | 25 | 0 | 75 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 70 | 30 | 0 | | | |
| PHF | .250 | .000 | .250 | .333 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .700 | .300 | .000 | .556 | .625 |

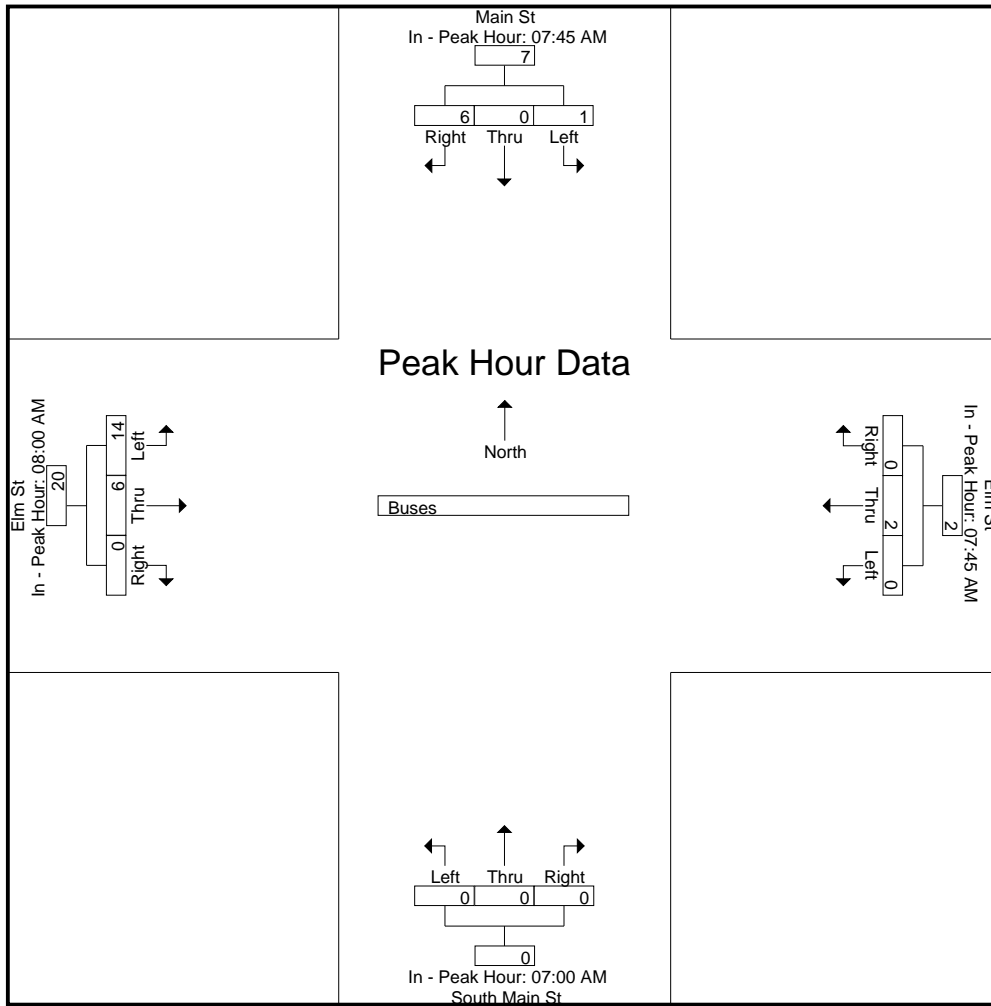
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



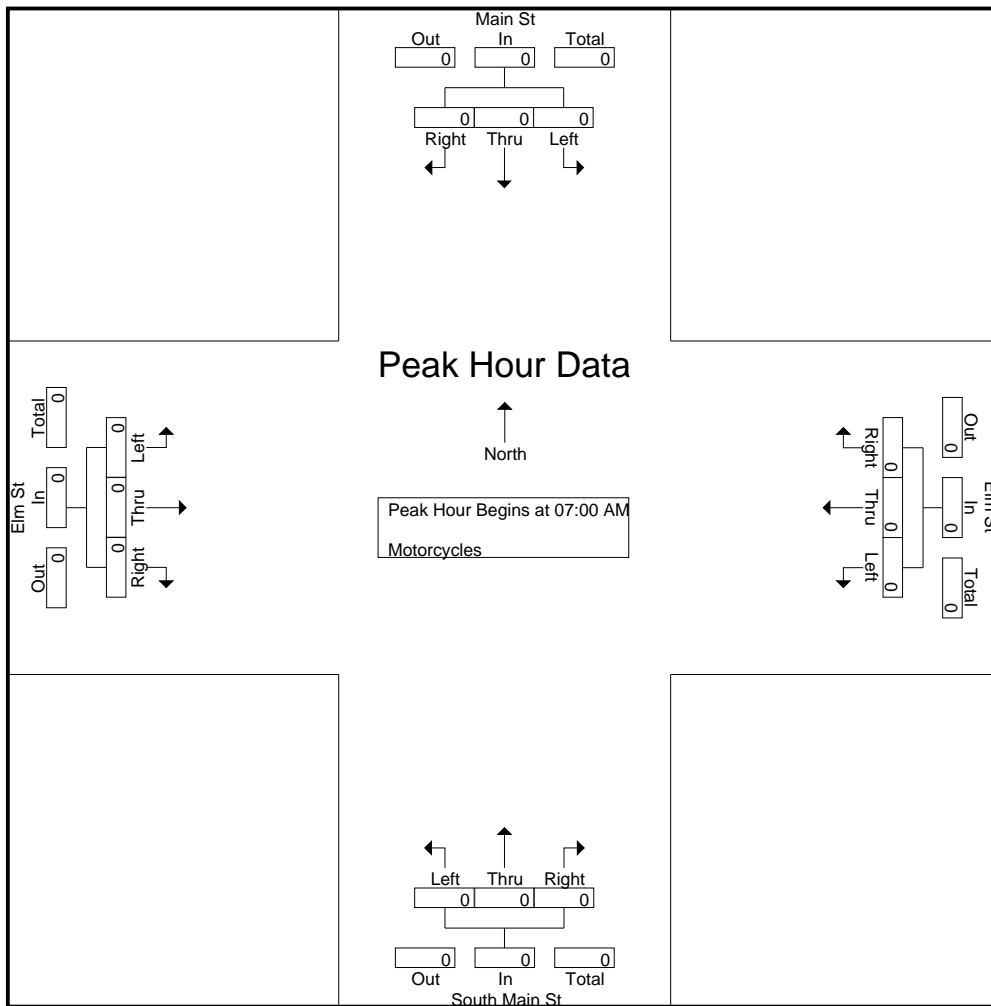
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:45 AM | | | | 07:00 AM | | | | 08:00 AM | | | | | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|------|------|------|------|
| +0 mins. | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | 9 |
| +15 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| +45 mins. | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 |
| Total Volume | 1 | 0 | 6 | 7 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 14 | 6 | 0 | 20 |
| % App. Total | 14.3 | 0 | 85.7 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 70 | 30 | 0 | |
| PHF | .250 | .000 | .500 | .583 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .700 | .300 | .000 | .556 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



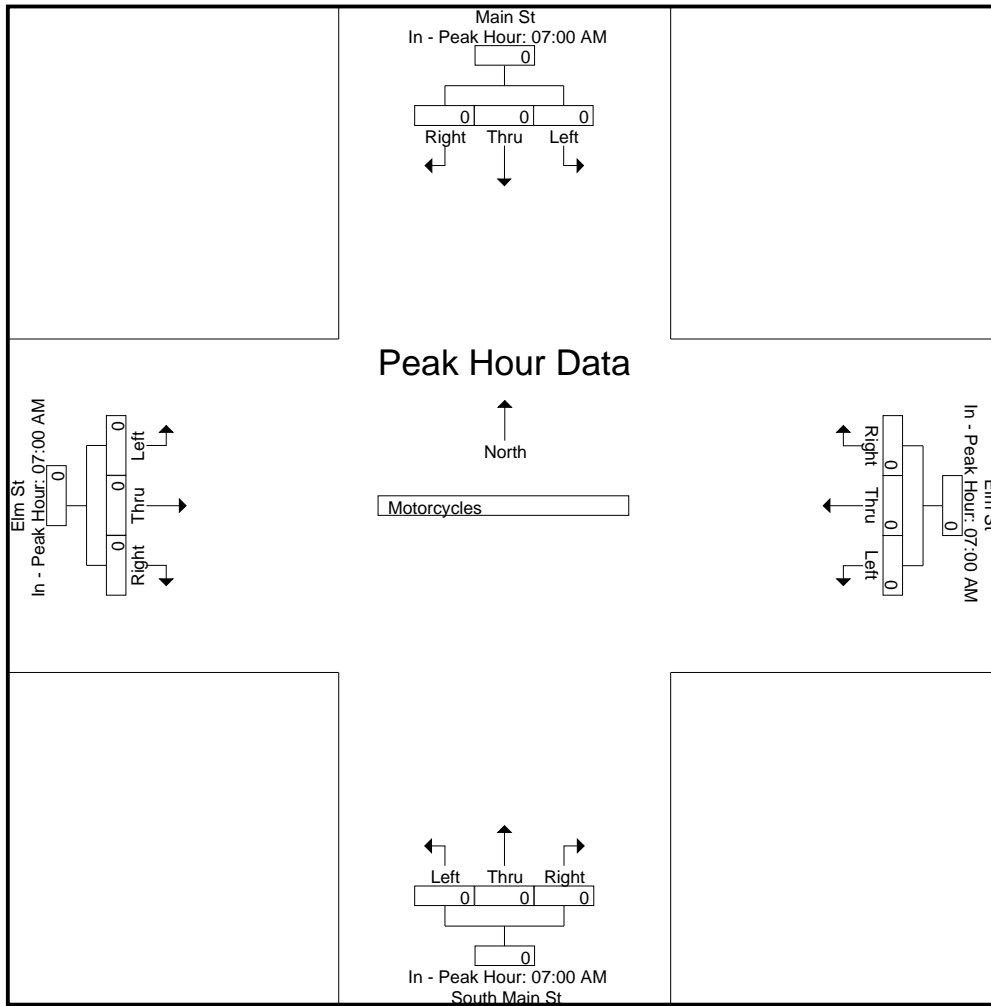
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

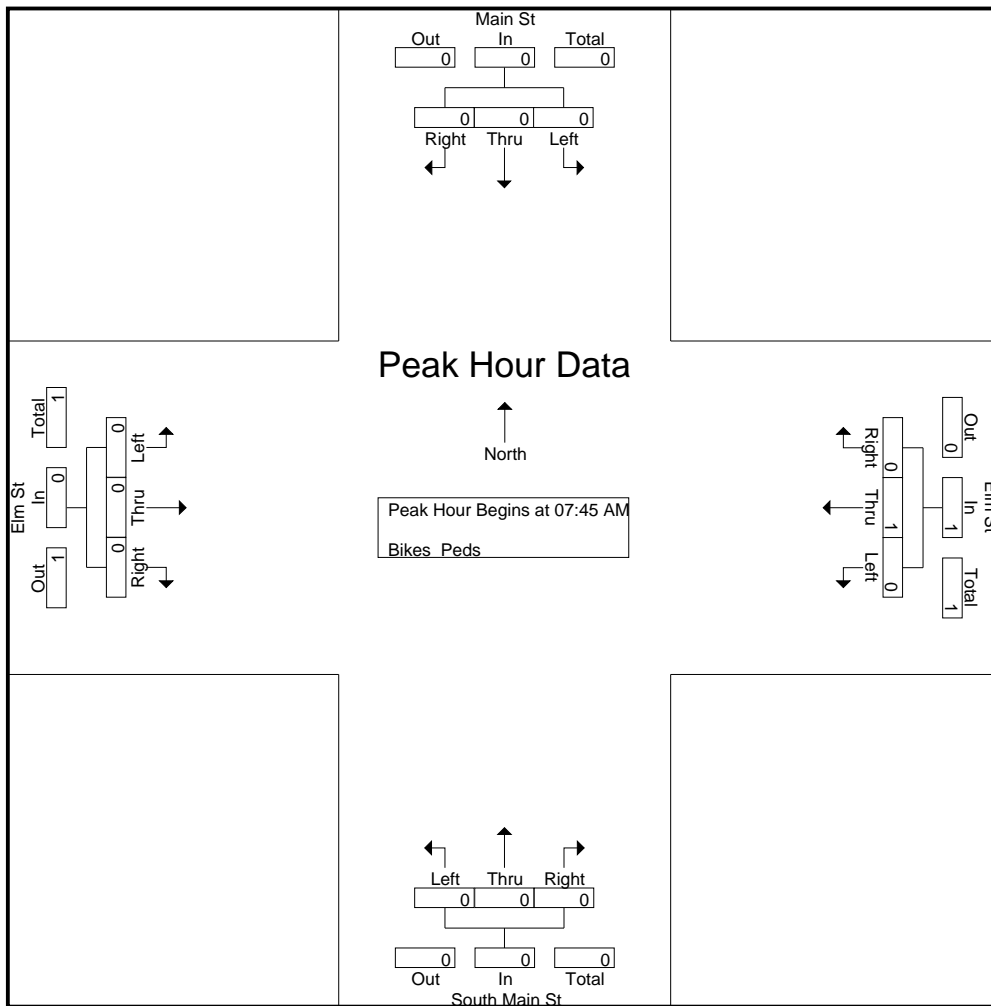
File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 1

Groups Printed- Bikes Peds

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|------|-------|------|------------------|------|-------|------|--------------------------|------|-------|------|------------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| Grand Total | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| Apprch % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 75 | 25 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total | |
|--|--------------------|------|-------|------------|------------------|------|-------|------------|--------------------------|------|-------|------------|------------------|------|-------|------------|------------|------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |

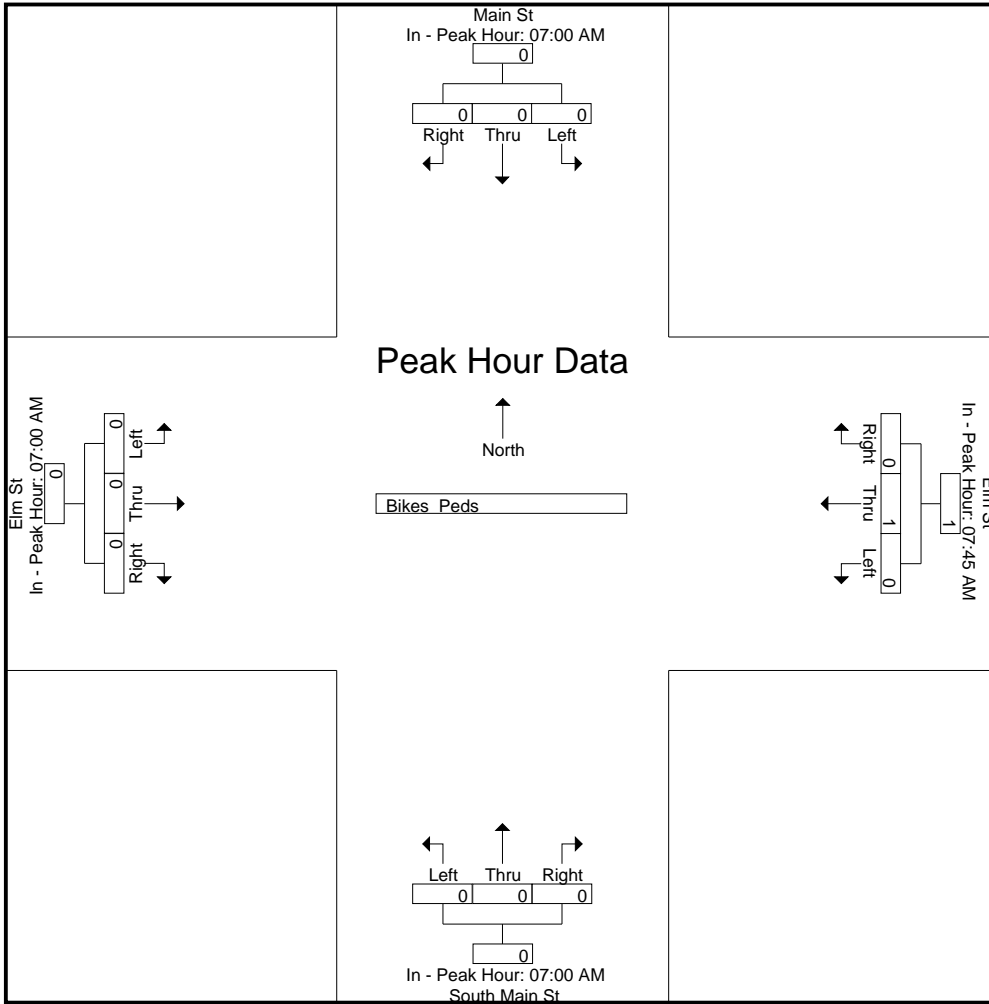
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



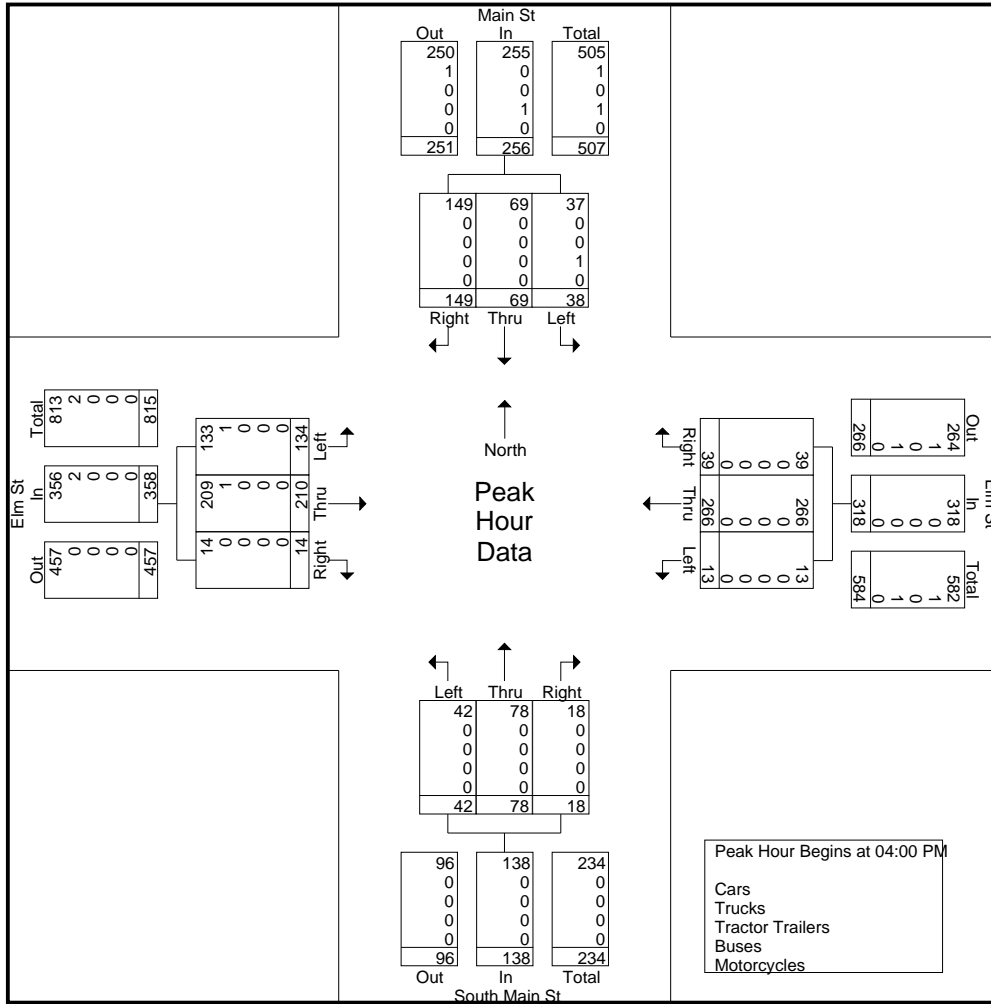
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:45 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



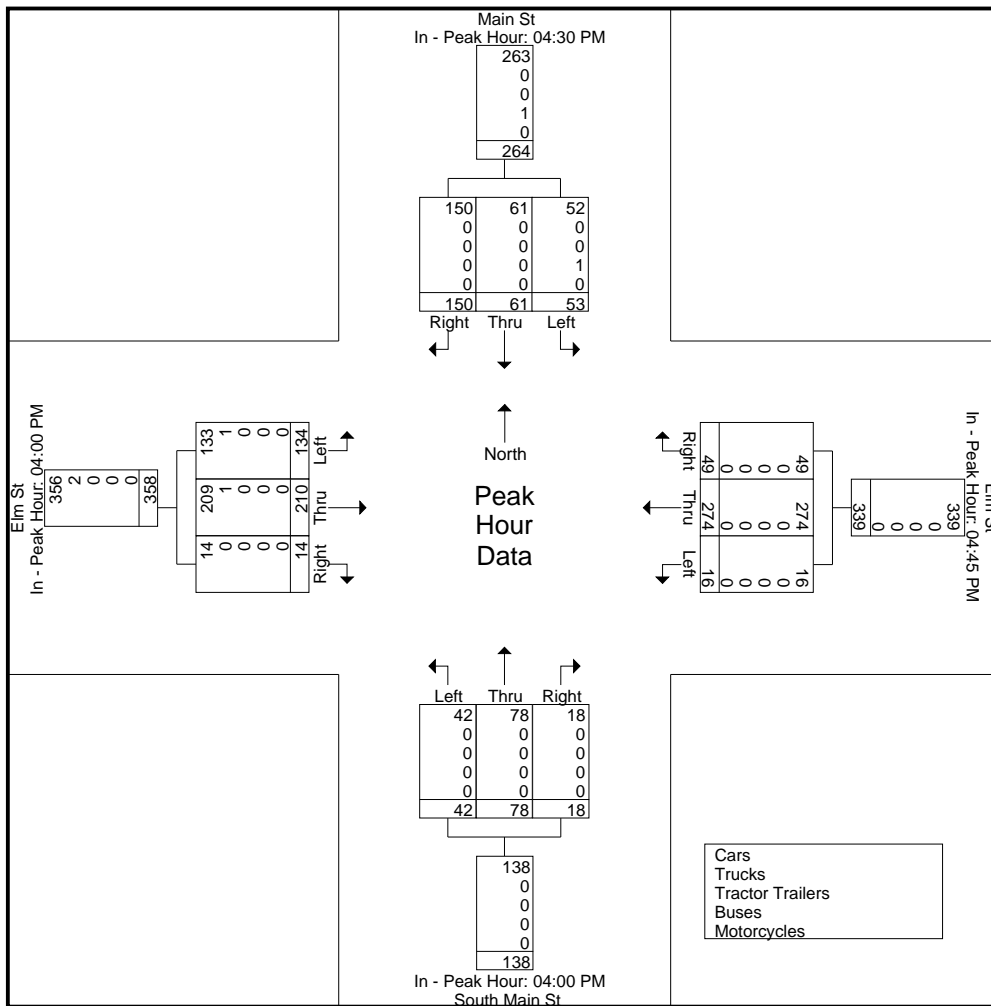
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:45 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 7 | 25 | 41 | 73 | 6 | 76 | 12 | 94 | 10 | 22 | 2 | 34 | 43 | 49 | 4 | 96 |
| +15 mins. | 13 | 17 | 36 | 66 | 2 | 73 | 18 | 93 | 14 | 22 | 6 | 42 | 25 | 43 | 2 | 70 |
| +30 mins. | 17 | 10 | 35 | 62 | 3 | 55 | 9 | 67 | 8 | 16 | 5 | 29 | 30 | 61 | 6 | 97 |
| +45 mins. | 16 | 9 | 38 | 63 | 5 | 70 | 10 | 85 | 10 | 18 | 5 | 33 | 36 | 57 | 2 | 95 |
| Total Volume | 53 | 61 | 150 | 264 | 16 | 274 | 49 | 339 | 42 | 78 | 18 | 138 | 134 | 210 | 14 | 358 |
| % App. Total | 20.1 | 23.1 | 56.8 | | 4.7 | 80.8 | 14.5 | | 30.4 | 56.5 | 13 | | 37.4 | 58.7 | 3.9 | |
| PHF | .779 | .610 | .915 | .904 | .667 | .901 | .681 | .902 | .750 | .886 | .750 | .821 | .779 | .861 | .583 | .923 |
| Cars | 52 | 61 | 150 | 263 | 16 | 274 | 49 | 339 | 42 | 78 | 18 | 138 | 133 | 209 | 14 | 356 |
| % Cars | 98.1 | 100 | 100 | 99.6 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99.3 | 99.5 | 100 | 99.4 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 0.5 | 0 | 0.6 |
| Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses | 1.9 | 0 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 3

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

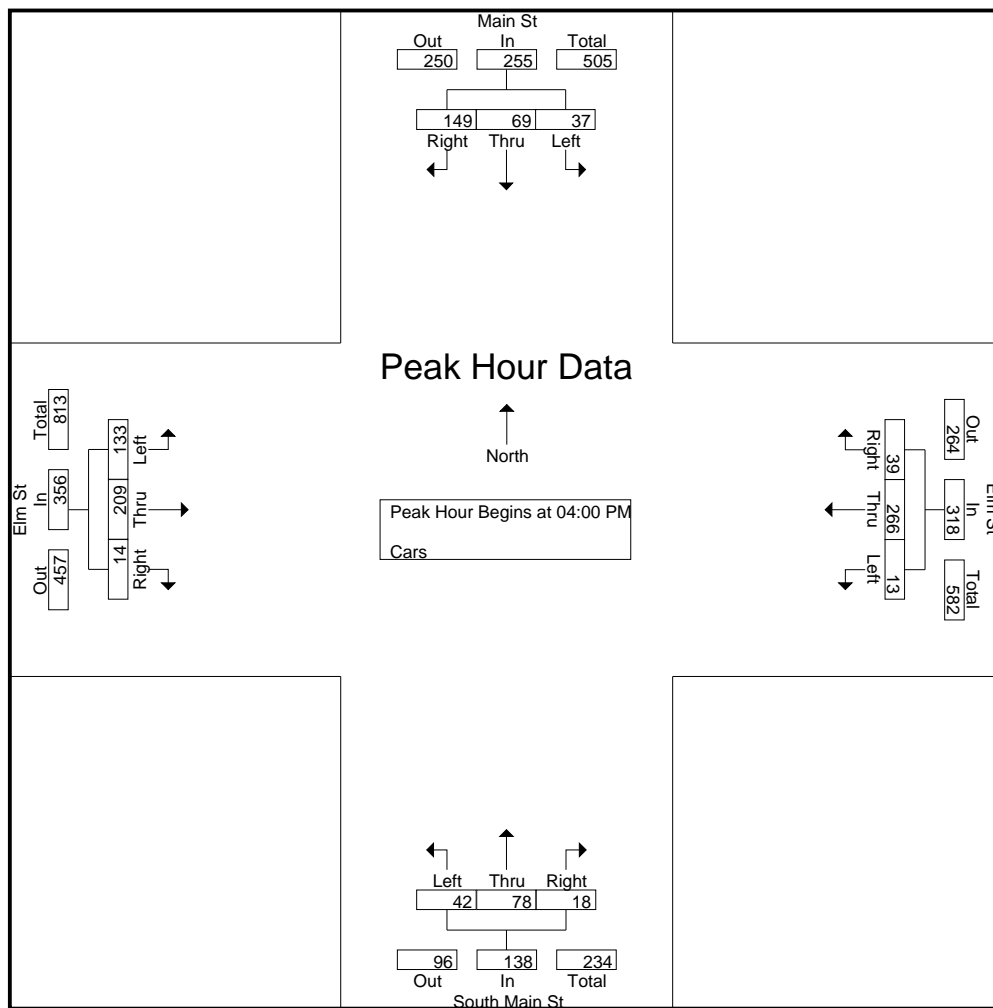
File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 1

Groups Printed- Cars

| Start Time | Main St From North | | | Elm St From East | | | South Main St From South | | | Elm St From West | | | Int. Total |
|--------------------|-----------------------|------------|------------|---------------------|------------|-----------|-----------------------------|------------|-----------|---------------------|------------|-----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 11 | 18 | 41 | 2 | 72 | 8 | 10 | 22 | 2 | 43 | 48 | 4 | 281 |
| 04:15 PM | 7 | 9 | 31 | 4 | 51 | 9 | 14 | 22 | 6 | 24 | 43 | 2 | 222 |
| 04:30 PM | 7 | 25 | 41 | 1 | 67 | 10 | 8 | 16 | 5 | 30 | 61 | 6 | 277 |
| 04:45 PM | 12 | 17 | 36 | 6 | 76 | 12 | 10 | 18 | 5 | 36 | 57 | 2 | 287 |
| Total | 37 | 69 | 149 | 13 | 266 | 39 | 42 | 78 | 18 | 133 | 209 | 14 | 1067 |
| 05:00 PM | 17 | 10 | 35 | 2 | 73 | 18 | 5 | 20 | 6 | 24 | 51 | 1 | 262 |
| 05:15 PM | 16 | 9 | 38 | 3 | 55 | 9 | 8 | 11 | 4 | 25 | 53 | 5 | 236 |
| 05:30 PM | 5 | 21 | 44 | 5 | 70 | 10 | 6 | 9 | 1 | 26 | 54 | 4 | 255 |
| 05:45 PM | 10 | 9 | 34 | 3 | 46 | 9 | 9 | 12 | 1 | 30 | 48 | 6 | 217 |
| Total | 48 | 49 | 151 | 13 | 244 | 46 | 28 | 52 | 12 | 105 | 206 | 16 | 970 |
| Grand Total | 85 | 118 | 300 | 26 | 510 | 85 | 70 | 130 | 30 | 238 | 415 | 30 | 2037 |
| Apprch % | 16.9 | 23.5 | 59.6 | 4.2 | 82.1 | 13.7 | 30.4 | 56.5 | 13 | 34.8 | 60.8 | 4.4 | |
| Total % | 4.2 | 5.8 | 14.7 | 1.3 | 25 | 4.2 | 3.4 | 6.4 | 1.5 | 11.7 | 20.4 | 1.5 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total |
|--|-----------------------|-----------|-----------|------------|---------------------|-----------|-----------|------------|-----------------------------|-----------|----------|------------|---------------------|-----------|----------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 11 | 18 | 41 | 70 | 2 | 72 | 8 | 82 | 10 | 22 | 2 | 34 | 43 | 48 | 4 | 95 | 281 |
| 04:15 PM | 7 | 9 | 31 | 47 | 4 | 51 | 9 | 64 | 14 | 22 | 6 | 42 | 24 | 43 | 2 | 69 | 222 |
| 04:30 PM | 7 | 25 | 41 | 73 | 1 | 67 | 10 | 78 | 8 | 16 | 5 | 29 | 30 | 61 | 6 | 97 | 277 |
| 04:45 PM | 12 | 17 | 36 | 65 | 6 | 76 | 12 | 94 | 10 | 18 | 5 | 33 | 36 | 57 | 2 | 95 | 287 |
| Total Volume | 37 | 69 | 149 | 255 | 13 | 266 | 39 | 318 | 42 | 78 | 18 | 138 | 133 | 209 | 14 | 356 | 1067 |
| % App. Total | 14.5 | 27.1 | 58.4 | | 4.1 | 83.6 | 12.3 | | 30.4 | 56.5 | 13 | | 37.4 | 58.7 | 3.9 | | |
| PHF | .771 | .690 | .909 | .873 | .542 | .875 | .813 | .846 | .750 | .886 | .750 | .821 | .773 | .857 | .583 | .918 | .929 |

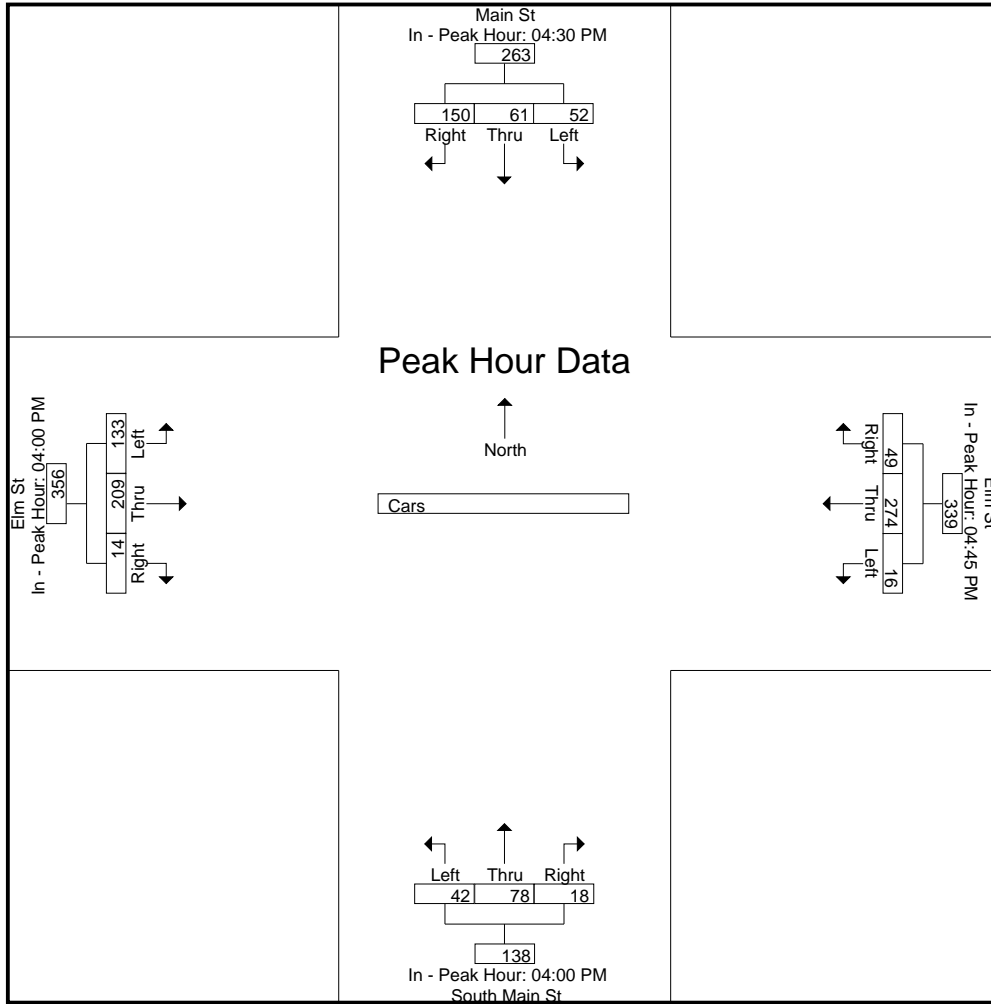
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:45 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 7 | 25 | 41 | 73 | 6 | 76 | 12 | 94 | 10 | 22 | 2 | 34 | 43 | 48 | 4 | 95 |
| +15 mins. | 12 | 17 | 36 | 65 | 2 | 73 | 18 | 93 | 14 | 22 | 6 | 42 | 24 | 43 | 2 | 69 |
| +30 mins. | 17 | 10 | 35 | 62 | 3 | 55 | 9 | 67 | 8 | 16 | 5 | 29 | 30 | 61 | 6 | 97 |
| +45 mins. | 16 | 9 | 38 | 63 | 5 | 70 | 10 | 85 | 10 | 18 | 5 | 33 | 36 | 57 | 2 | 95 |
| Total Volume | 52 | 61 | 150 | 263 | 16 | 274 | 49 | 339 | 42 | 78 | 18 | 138 | 133 | 209 | 14 | 356 |
| % App. Total | 19.8 | 23.2 | 57 | | 4.7 | 80.8 | 14.5 | | 30.4 | 56.5 | 13 | | 37.4 | 58.7 | 3.9 | |
| PHF | .765 | .610 | .915 | .901 | .667 | .901 | .681 | .902 | .750 | .886 | .750 | .821 | .773 | .857 | .583 | .918 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

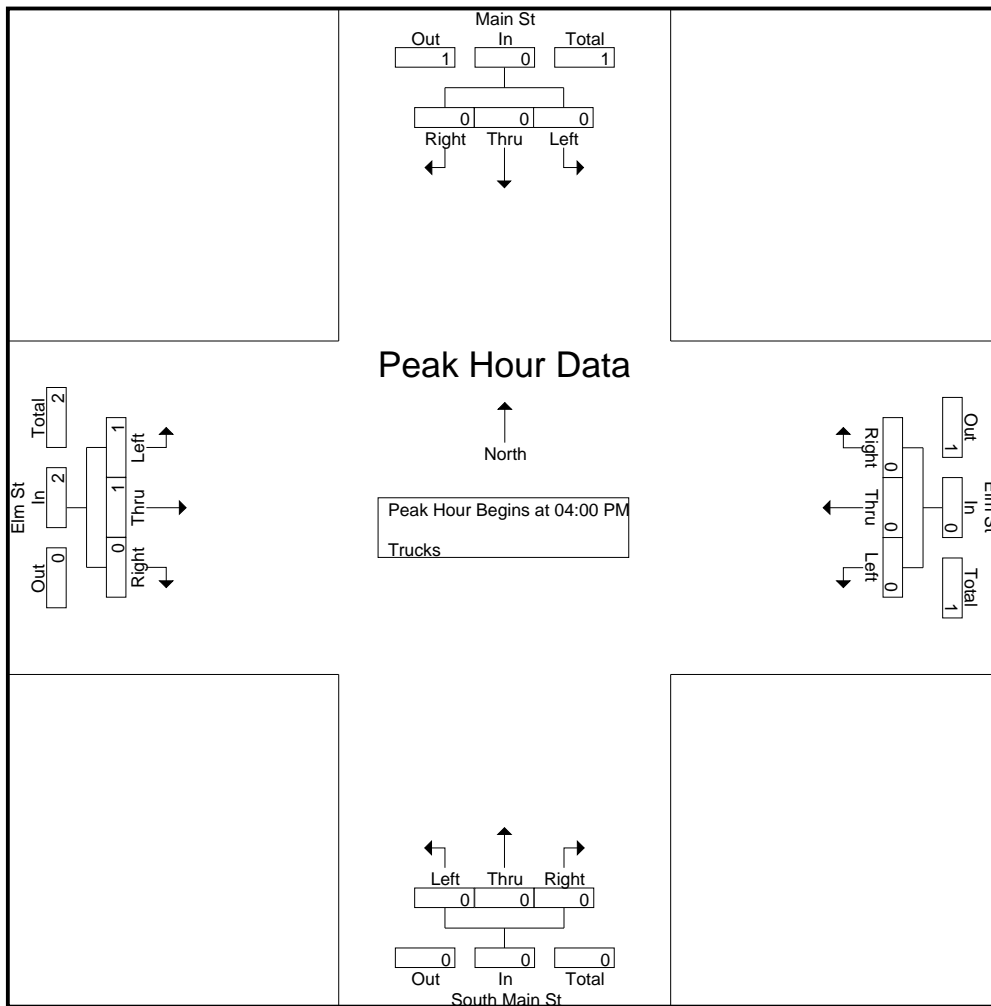
File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 1

Groups Printed- Trucks

| Start Time | Main St From North | | | Elm St From East | | | South Main St From South | | | Elm St From West | | | Int. Total |
|-------------|-----------------------|------|-------|---------------------|------|-------|-----------------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 4 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 33.3 | 66.7 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 50 | 0 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total |
|--|-----------------------|------|-------|------------|---------------------|------|-------|------------|-----------------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 50 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .500 | .500 |

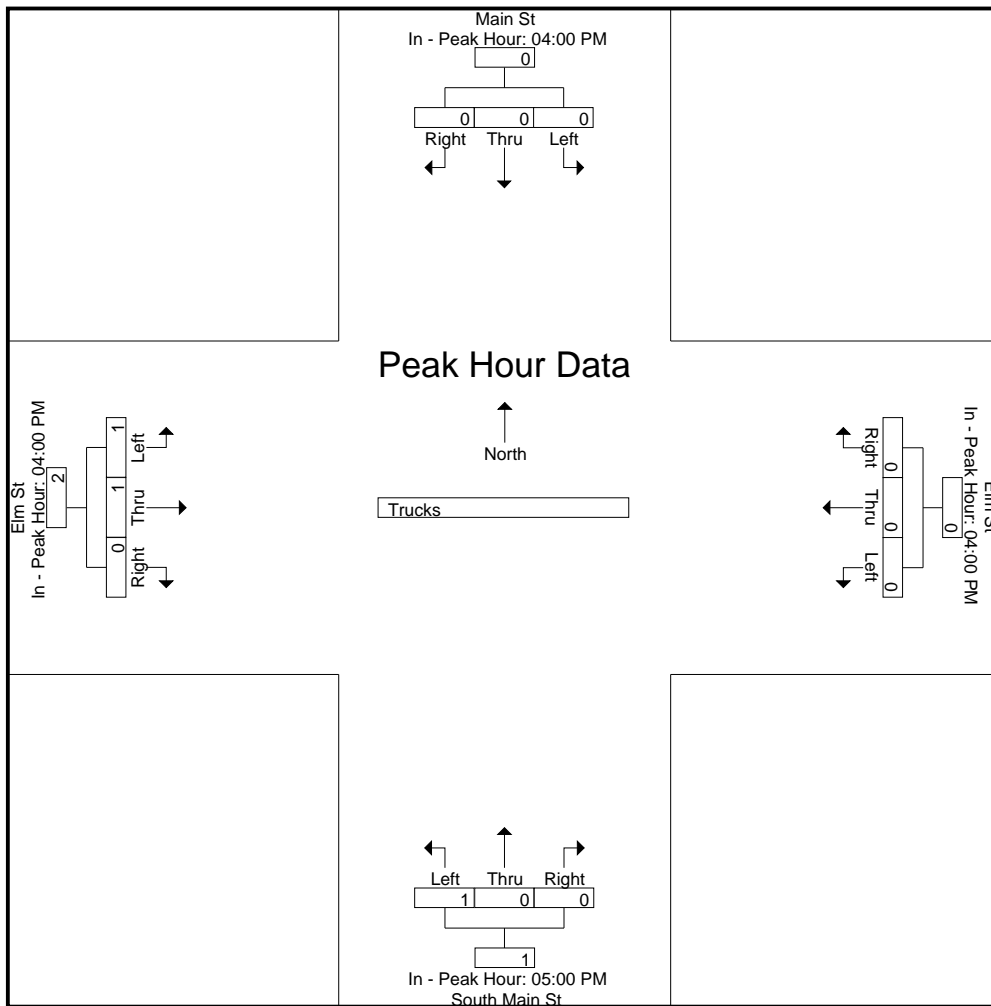
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E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



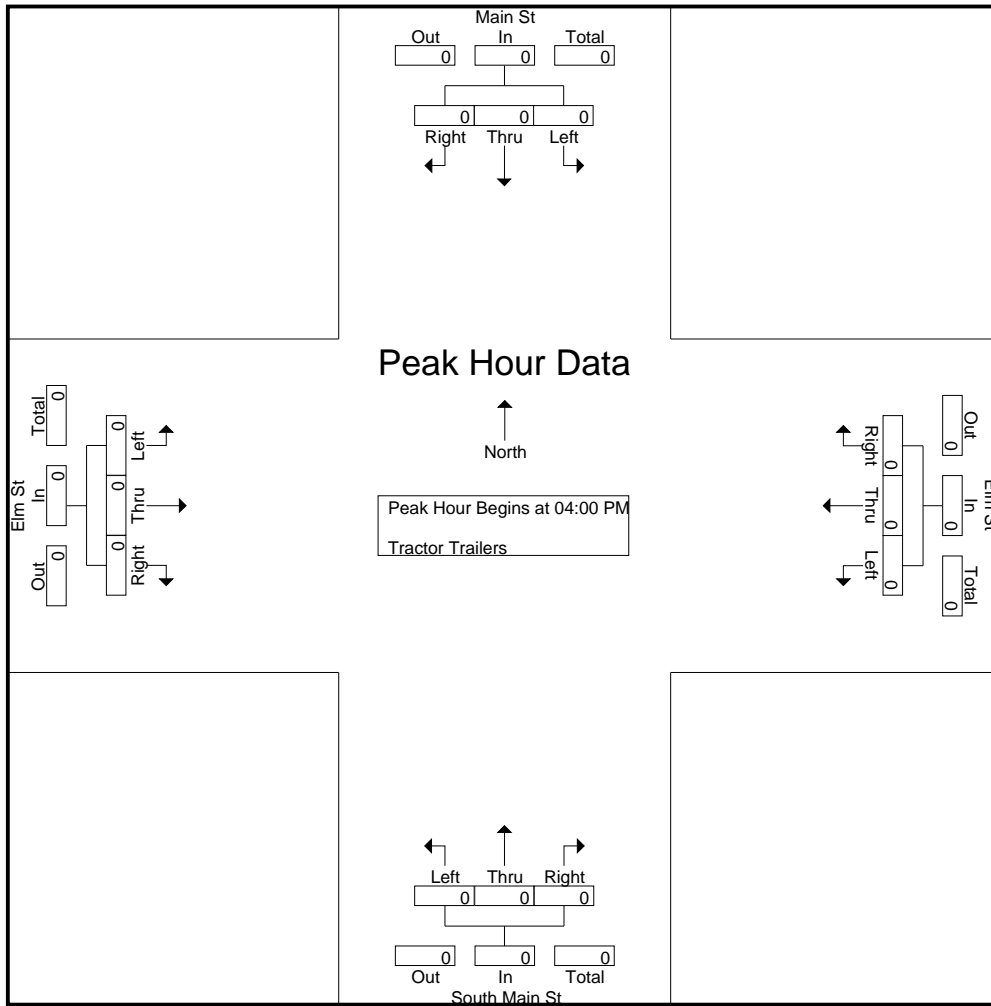
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 05:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 50 | 50 | 0 | 100 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .250 | .000 | .500 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



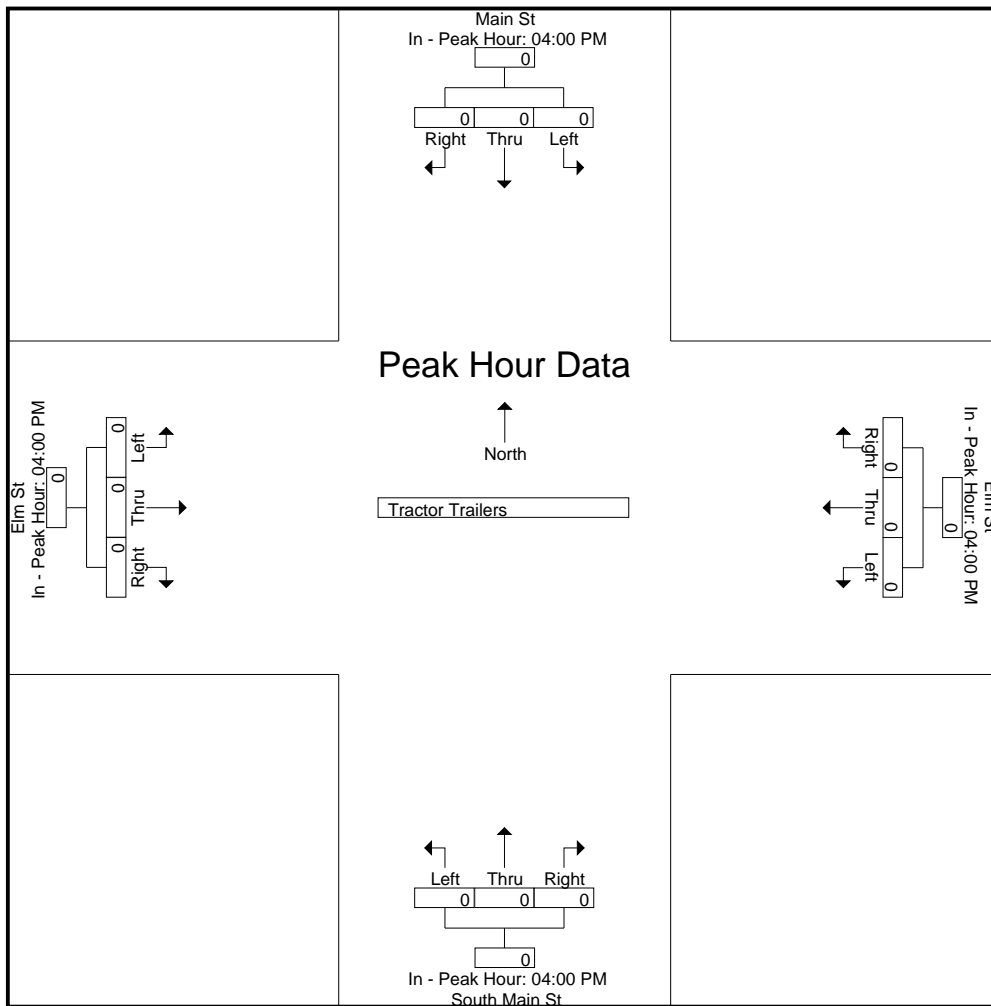
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



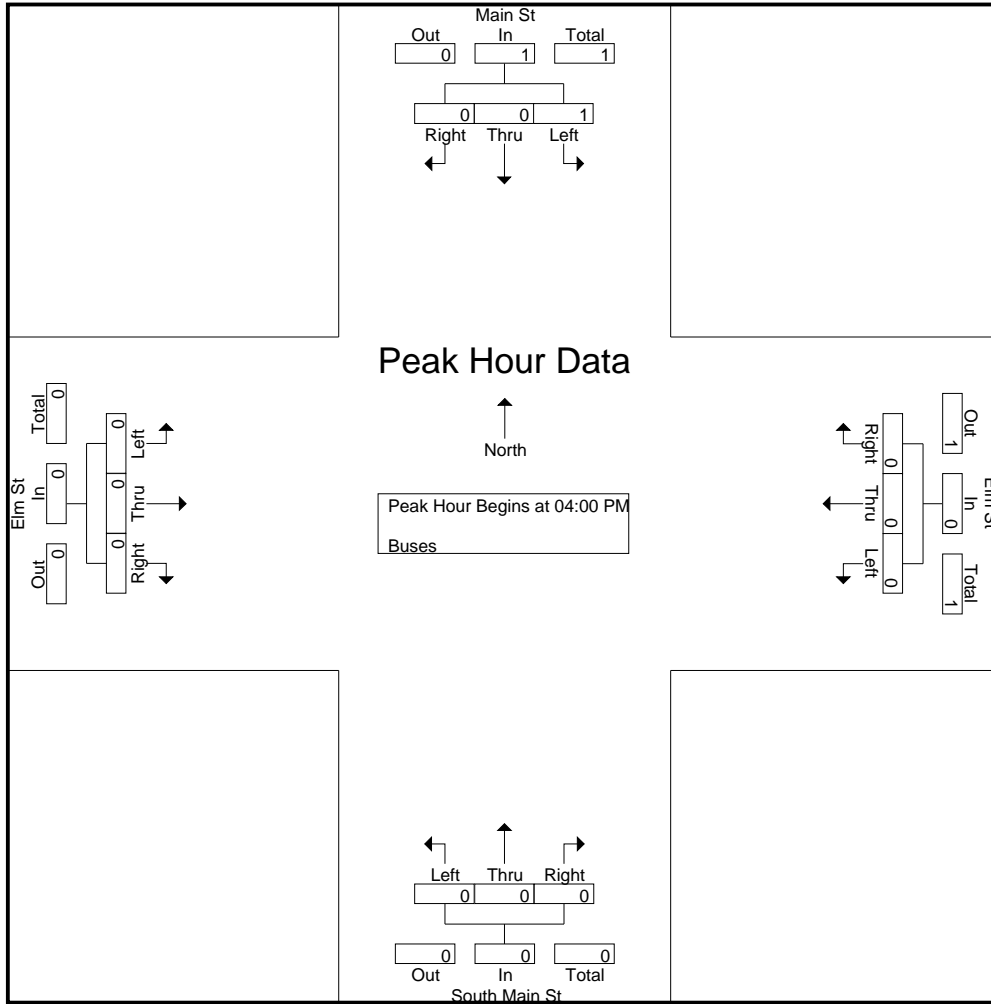
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



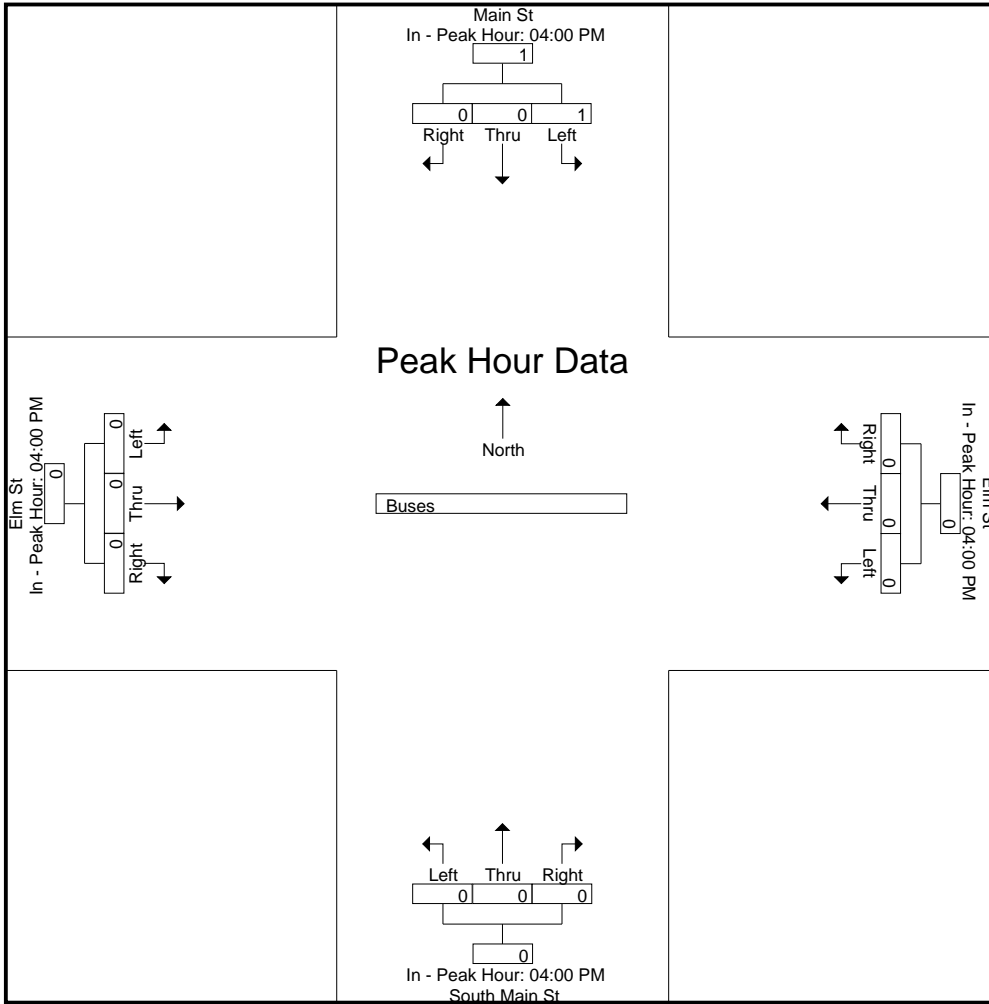
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



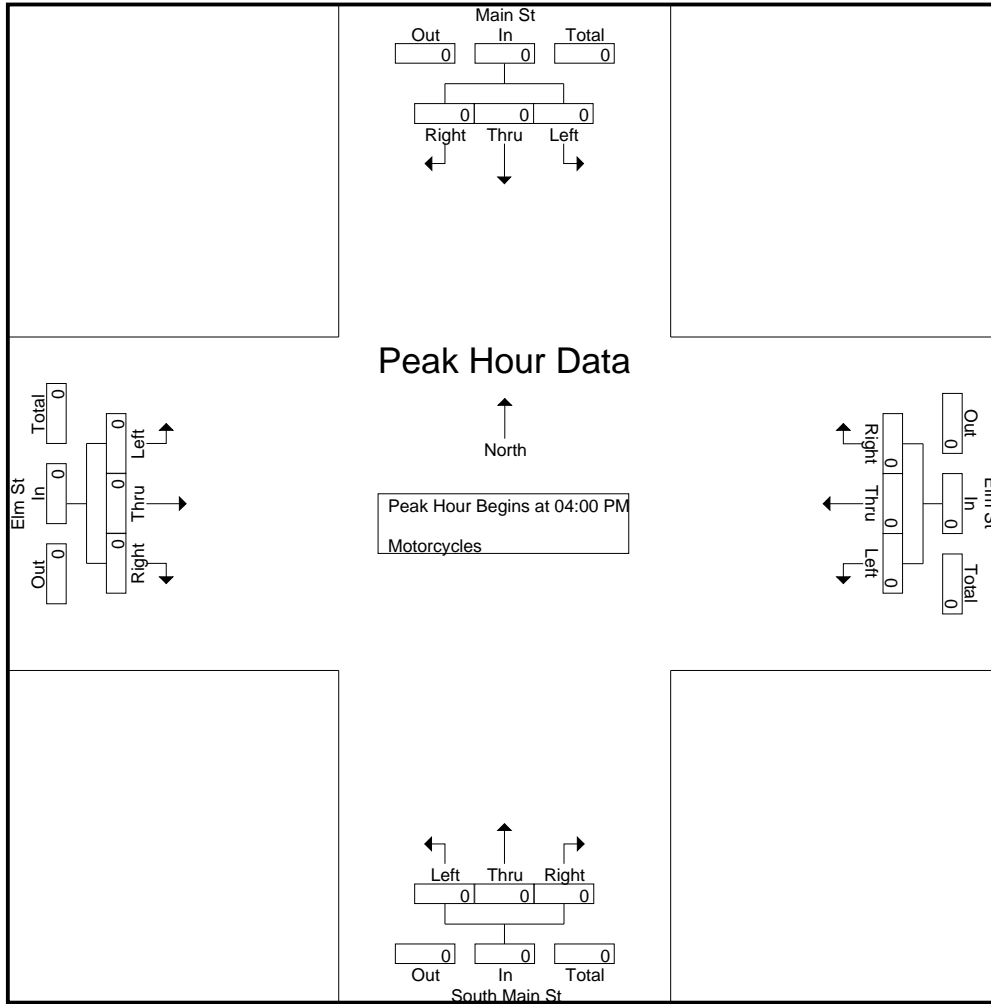
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



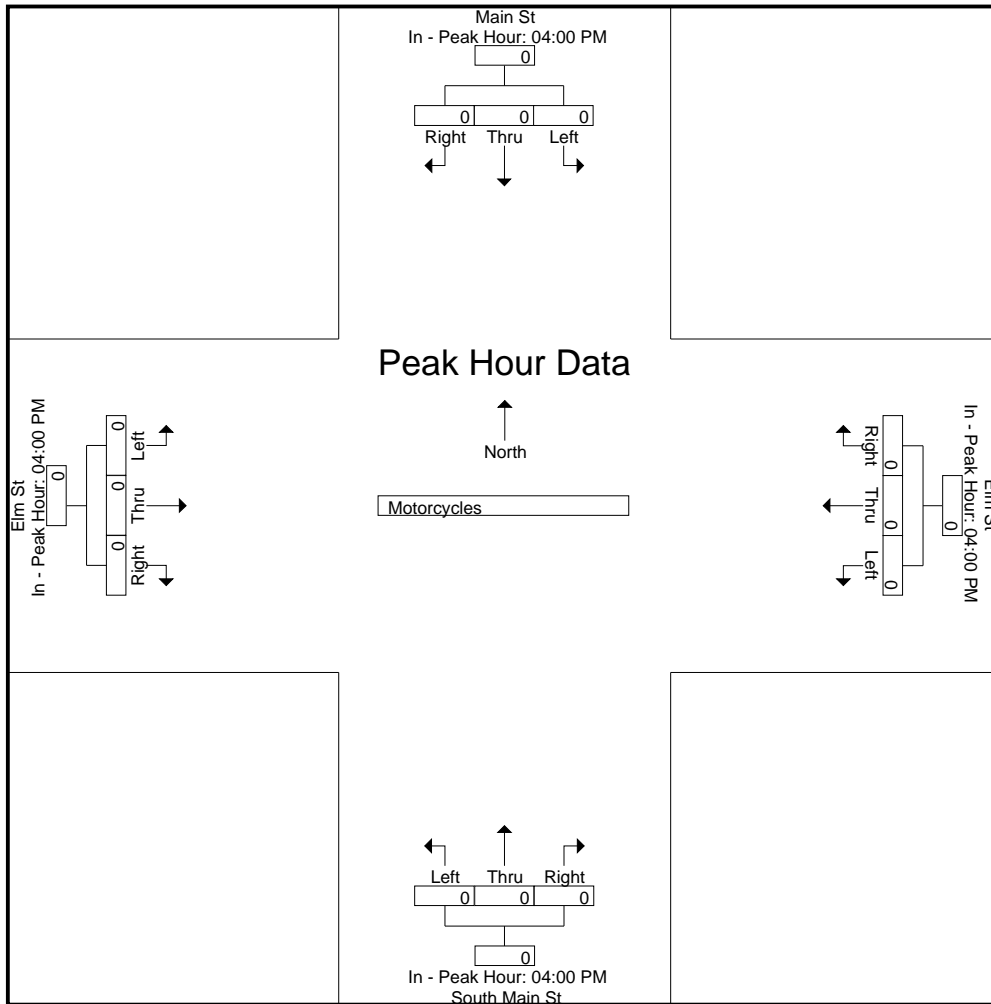
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



Accurate Counts
978-664-2565

File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 1

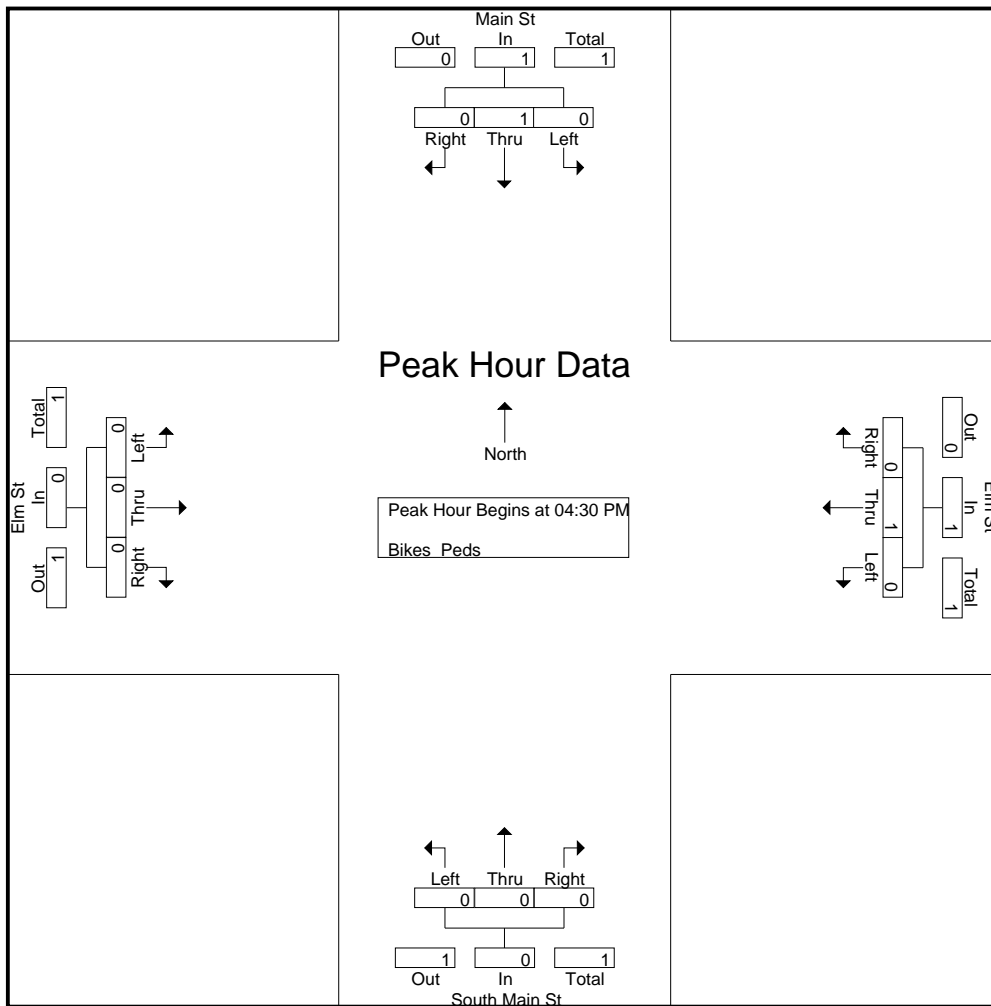
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

Groups Printed- Bikes Peds

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|----------|----------|----------|------------------|----------|----------|----------|--------------------------|----------|----------|----------|------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 04:00 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 | 0 | 5 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 6 | 0 | 6 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:15 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 |
| Grand Total | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 7 | 2 | 9 |
| Apprch % | 0 | 100 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | 0 | 50 | 0 | | 0 | 50 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 77.8 | 22.2 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total |
|--|--------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|--------------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % App. Total | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .250 | .000 | .250 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |

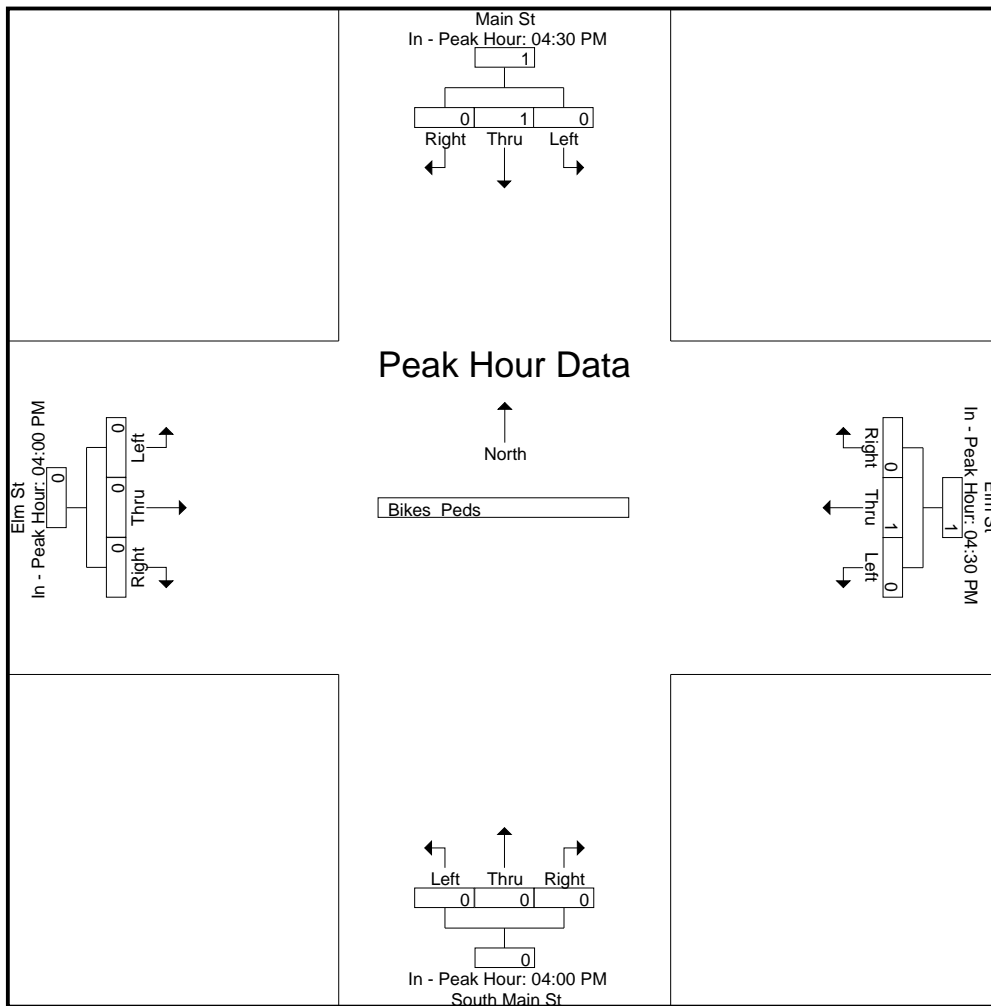
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



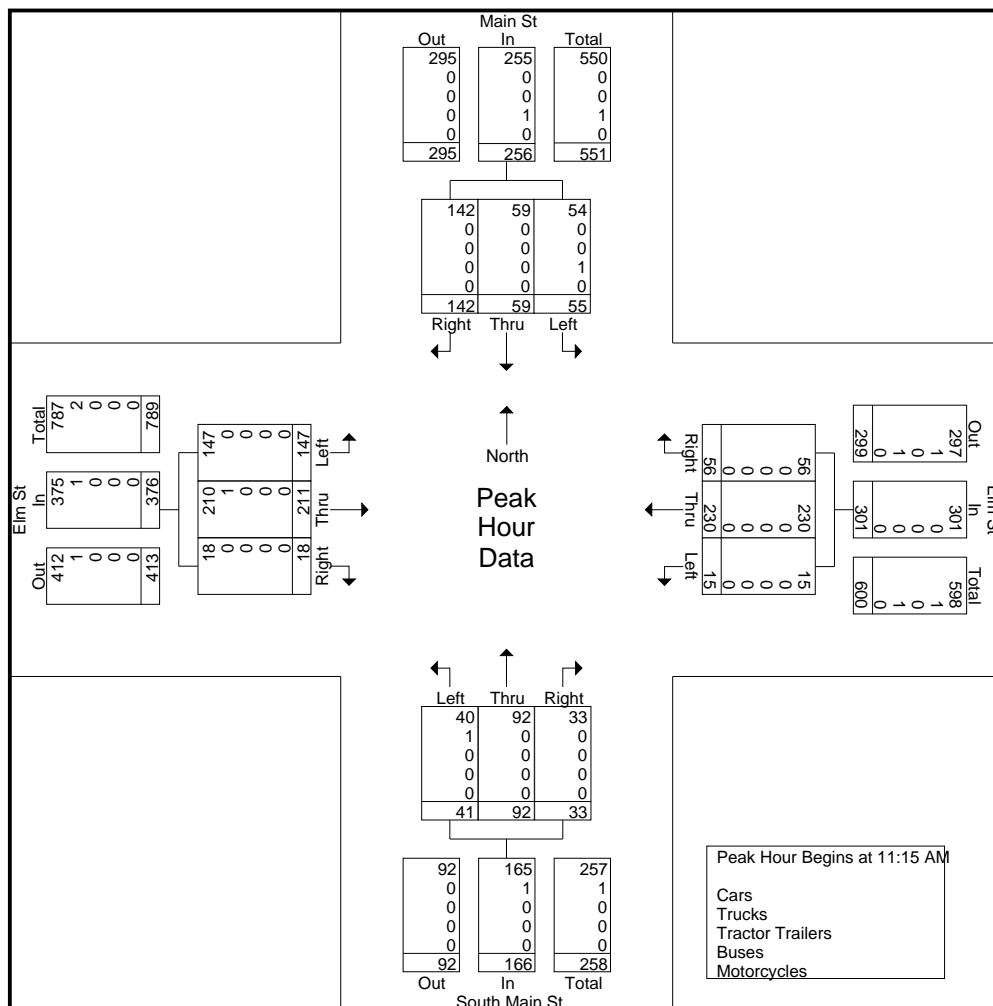
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:30 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 100 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PHF | .000 | .250 | .000 | .250 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear



N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



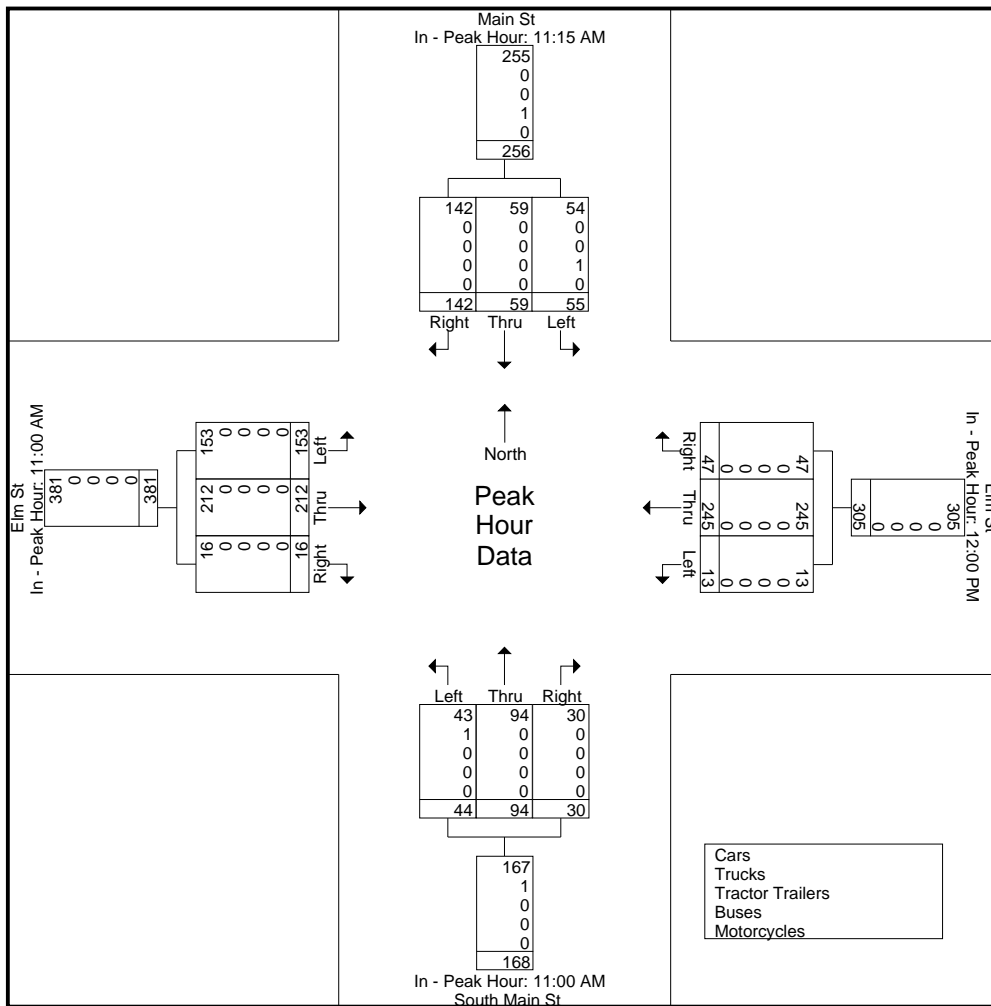
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | | 12:00 PM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 14 | 17 | 36 | 67 | 4 | 66 | 11 | 81 | 12 | 17 | 4 | 33 | 36 | 44 | 1 | 81 |
| +15 mins. | 16 | 12 | 25 | 53 | 1 | 55 | 10 | 66 | 11 | 27 | 9 | 47 | 40 | 50 | 4 | 94 |
| +30 mins. | 12 | 14 | 44 | 70 | 4 | 54 | 11 | 69 | 10 | 23 | 4 | 37 | 41 | 70 | 4 | 115 |
| +45 mins. | 13 | 16 | 37 | 66 | 4 | 70 | 15 | 89 | 11 | 27 | 13 | 51 | 36 | 48 | 7 | 91 |
| Total Volume | 55 | 59 | 142 | 256 | 13 | 245 | 47 | 305 | 44 | 94 | 30 | 168 | 153 | 212 | 16 | 381 |
| % App. Total | 21.5 | 23 | 55.5 | | 4.3 | 80.3 | 15.4 | | 26.2 | 56 | 17.9 | | 40.2 | 55.6 | 4.2 | |
| PHF | .859 | .868 | .807 | .914 | .813 | .875 | .783 | .857 | .917 | .870 | .577 | .824 | .933 | .757 | .571 | .828 |
| Cars | 54 | 59 | 142 | 255 | 13 | 245 | 47 | 305 | 43 | 94 | 30 | 167 | 153 | 212 | 16 | 381 |
| % Cars | 98.2 | 100 | 100 | 99.6 | 100 | 100 | 100 | 100 | 97.7 | 100 | 100 | 99.4 | 100 | 100 | 100 | 100 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.3 | 0 | 0 | 0.6 | 0 | 0 | 0 | 0 |
| Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Tractor Trailers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses | 1.8 | 0 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

File Name : 187600S5
Site Code : 18760005
Start Date : 2/27/2021
Page No : 3

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

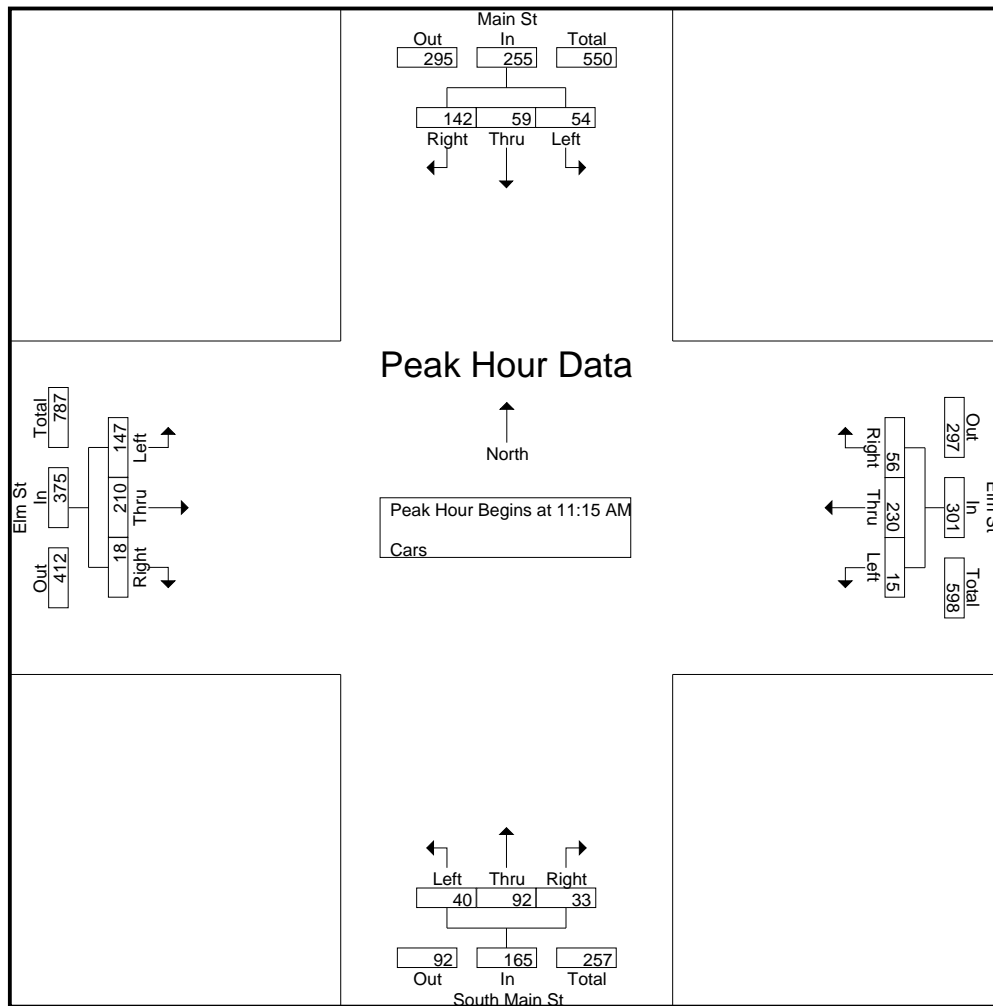
File Name : 187600S5
Site Code : 18760005
Start Date : 2/27/2021
Page No : 1

Groups Printed- Cars

| Start Time | Main St From North | | | Elm St From East | | | South Main St From South | | | Elm St From West | | | Int. Total |
|-------------|-----------------------|------|-------|---------------------|------|-------|-----------------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 6 | 9 | 31 | 4 | 44 | 12 | 12 | 17 | 4 | 36 | 44 | 1 | 220 |
| 11:15 AM | 14 | 17 | 36 | 2 | 57 | 11 | 11 | 27 | 9 | 40 | 50 | 4 | 278 |
| 11:30 AM | 16 | 12 | 25 | 5 | 54 | 21 | 10 | 23 | 4 | 41 | 70 | 4 | 285 |
| 11:45 AM | 12 | 14 | 44 | 4 | 53 | 13 | 10 | 27 | 13 | 36 | 48 | 7 | 281 |
| Total | 48 | 52 | 136 | 15 | 208 | 57 | 43 | 94 | 30 | 153 | 212 | 16 | 1064 |
| 12:00 PM | 12 | 16 | 37 | 4 | 66 | 11 | 9 | 15 | 7 | 30 | 42 | 3 | 252 |
| 12:15 PM | 11 | 15 | 37 | 1 | 55 | 10 | 6 | 13 | 12 | 21 | 48 | 1 | 230 |
| 12:30 PM | 10 | 9 | 26 | 4 | 54 | 11 | 3 | 16 | 6 | 40 | 54 | 4 | 237 |
| 12:45 PM | 13 | 15 | 21 | 4 | 70 | 15 | 4 | 15 | 5 | 26 | 46 | 4 | 238 |
| Total | 46 | 55 | 121 | 13 | 245 | 47 | 22 | 59 | 30 | 117 | 190 | 12 | 957 |
| Grand Total | 94 | 107 | 257 | 28 | 453 | 104 | 65 | 153 | 60 | 270 | 402 | 28 | 2021 |
| Apprch % | 20.5 | 23.4 | 56.1 | 4.8 | 77.4 | 17.8 | 23.4 | 55 | 21.6 | 38.6 | 57.4 | 4 | |
| Total % | 4.7 | 5.3 | 12.7 | 1.4 | 22.4 | 5.1 | 3.2 | 7.6 | 3 | 13.4 | 19.9 | 1.4 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total |
|--|-----------------------|------|-------|------------|---------------------|------|-------|------------|-----------------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 14 | 17 | 36 | 67 | 2 | 57 | 11 | 70 | 11 | 27 | 9 | 47 | 40 | 50 | 4 | 94 | 278 |
| 11:30 AM | 16 | 12 | 25 | 53 | 5 | 54 | 21 | 80 | 10 | 23 | 4 | 37 | 41 | 70 | 4 | 115 | 285 |
| 11:45 AM | 12 | 14 | 44 | 70 | 4 | 53 | 13 | 70 | 10 | 27 | 13 | 50 | 36 | 48 | 7 | 91 | 281 |
| 12:00 PM | 12 | 16 | 37 | 65 | 4 | 66 | 11 | 81 | 9 | 15 | 7 | 31 | 30 | 42 | 3 | 75 | 252 |
| Total Volume | 54 | 59 | 142 | 255 | 15 | 230 | 56 | 301 | 40 | 92 | 33 | 165 | 147 | 210 | 18 | 375 | 1096 |
| % App. Total | 21.2 | 23.1 | 55.7 | | 5 | 76.4 | 18.6 | | 24.2 | 55.8 | 20 | | 39.2 | 56 | 4.8 | | |
| PHF | .844 | .868 | .807 | .911 | .750 | .871 | .667 | .929 | .909 | .852 | .635 | .825 | .896 | .750 | .643 | .815 | .961 |

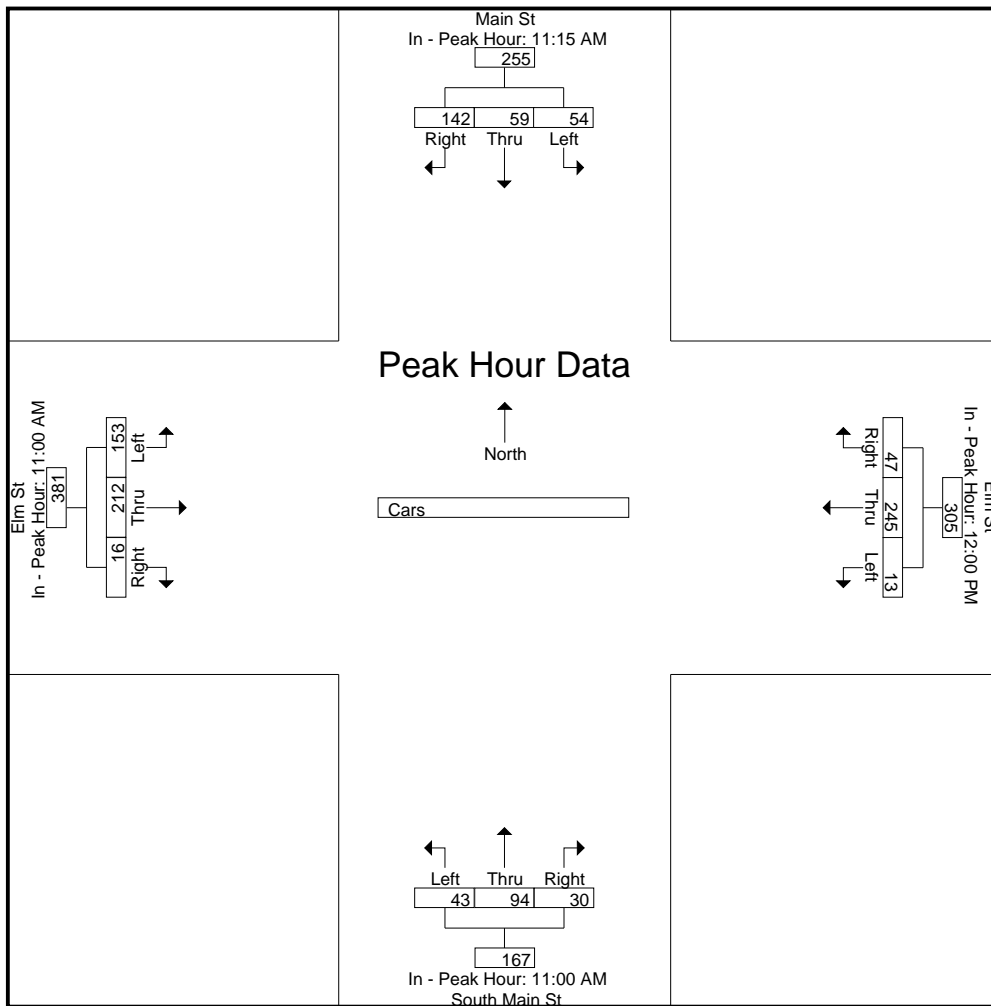
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | | 12:00 PM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 14 | 17 | 36 | 67 | 4 | 66 | 11 | 81 | 12 | 17 | 4 | 33 | 36 | 44 | 1 | 81 |
| +15 mins. | 16 | 12 | 25 | 53 | 1 | 55 | 10 | 66 | 11 | 27 | 9 | 47 | 40 | 50 | 4 | 94 |
| +30 mins. | 12 | 14 | 44 | 70 | 4 | 54 | 11 | 69 | 10 | 23 | 4 | 37 | 41 | 70 | 4 | 115 |
| +45 mins. | 12 | 16 | 37 | 65 | 4 | 70 | 15 | 89 | 10 | 27 | 13 | 50 | 36 | 48 | 7 | 91 |
| Total Volume | 54 | 59 | 142 | 255 | 13 | 245 | 47 | 305 | 43 | 94 | 30 | 167 | 153 | 212 | 16 | 381 |
| % App. Total | 21.2 | 23.1 | 55.7 | | 4.3 | 80.3 | 15.4 | | 25.7 | 56.3 | 18 | | 40.2 | 55.6 | 4.2 | |
| PHF | .844 | .868 | .807 | .911 | .813 | .875 | .783 | .857 | .896 | .870 | .577 | .835 | .933 | .757 | .571 | .828 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

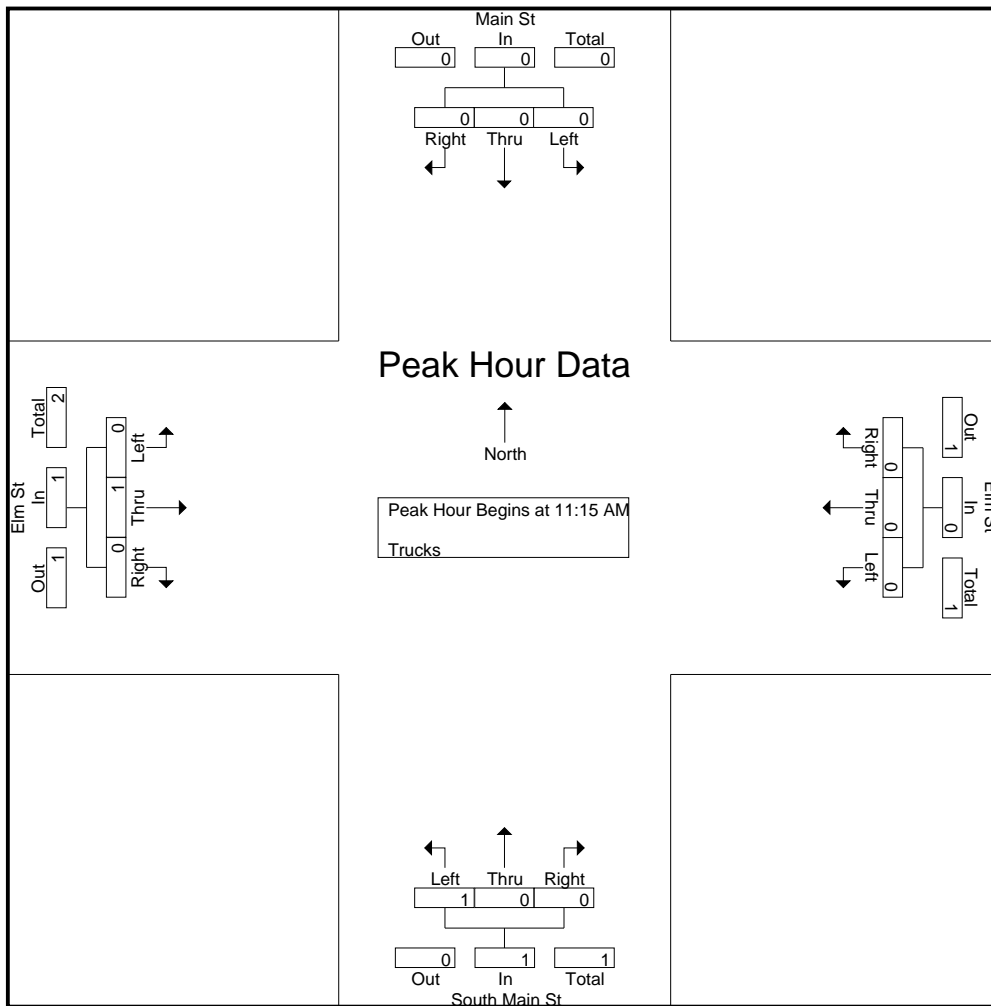
File Name : 187600S5
Site Code : 18760005
Start Date : 2/27/2021
Page No : 1

Groups Printed- Trucks

| Start Time | Main St From North | | | Elm St From East | | | South Main St From South | | | Elm St From West | | | Int. Total |
|-------------|-----------------------|------|-------|---------------------|------|-------|-----------------------------|------|-------|---------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 50 | 0 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total |
|--|-----------------------|------|-------|------------|---------------------|------|-------|------------|-----------------------------|------|-------|------------|---------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .000 | .250 | .000 | .500 | |

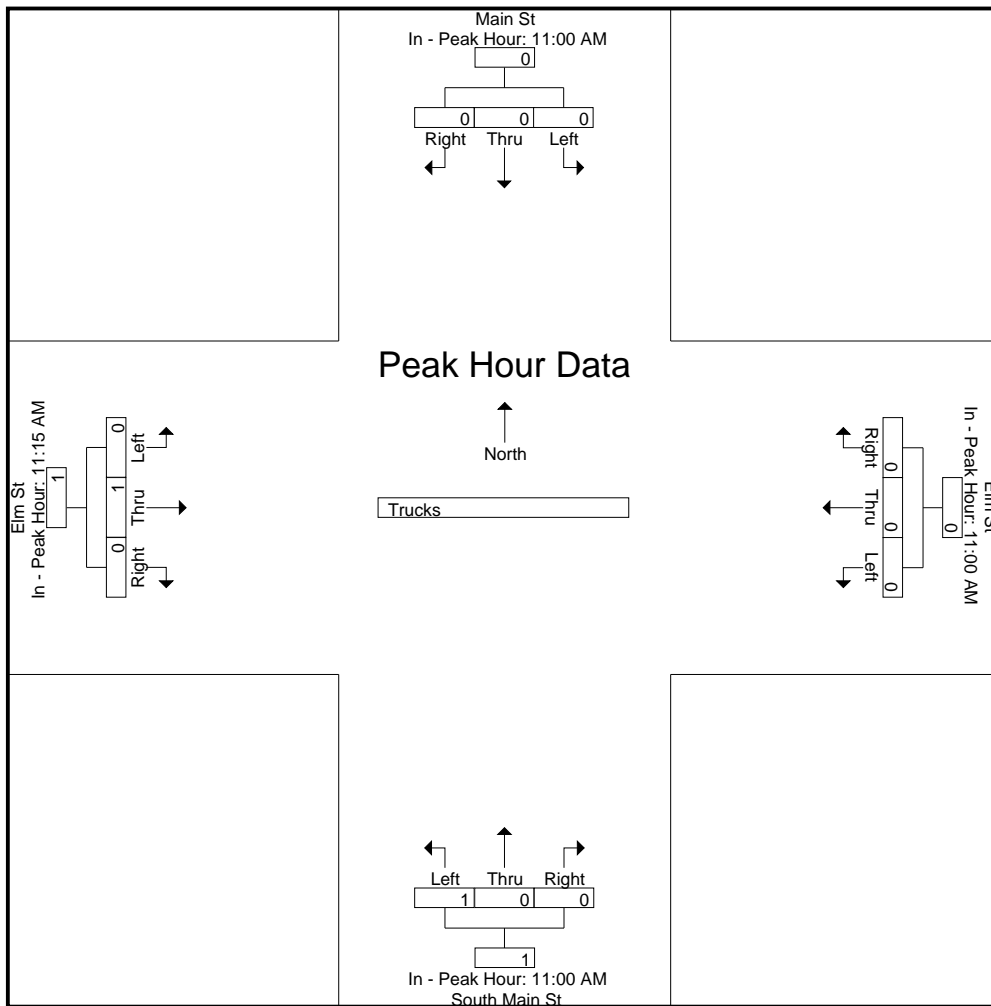
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



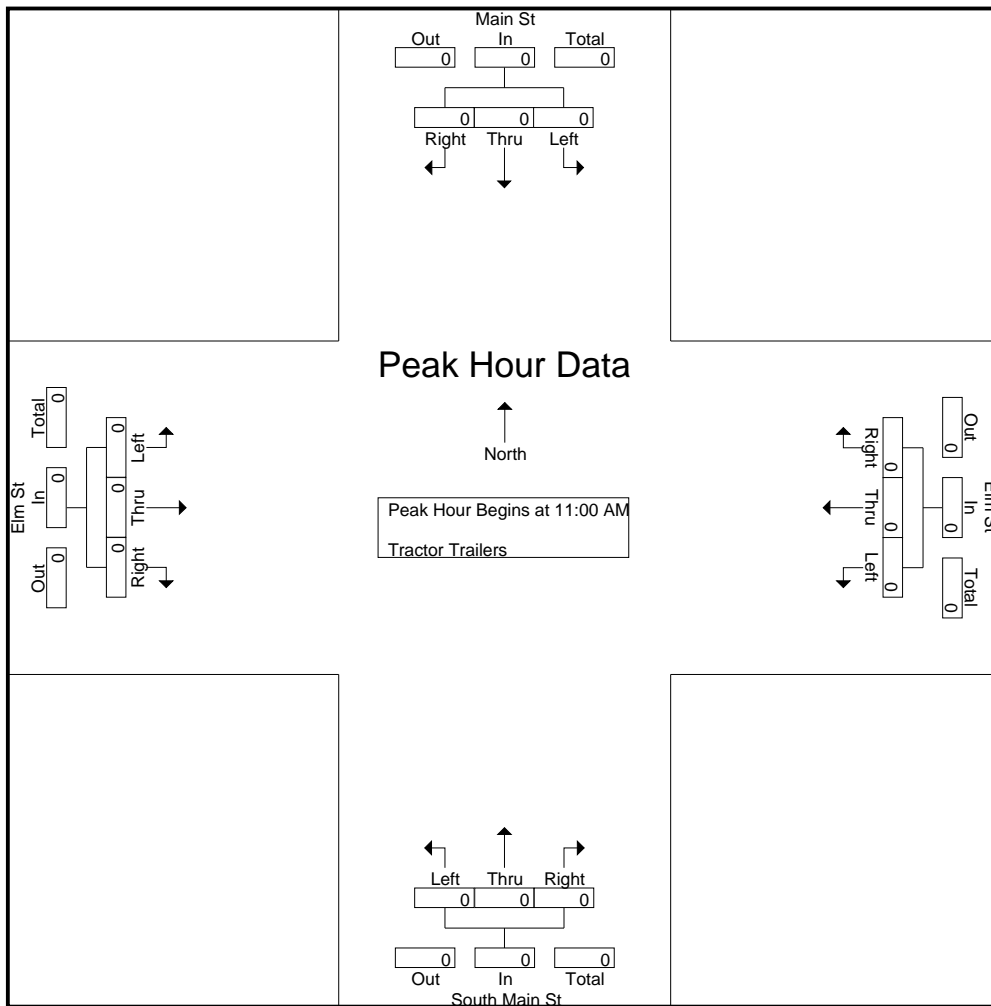
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:15 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .250 | .000 | .250 | .000 | .250 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



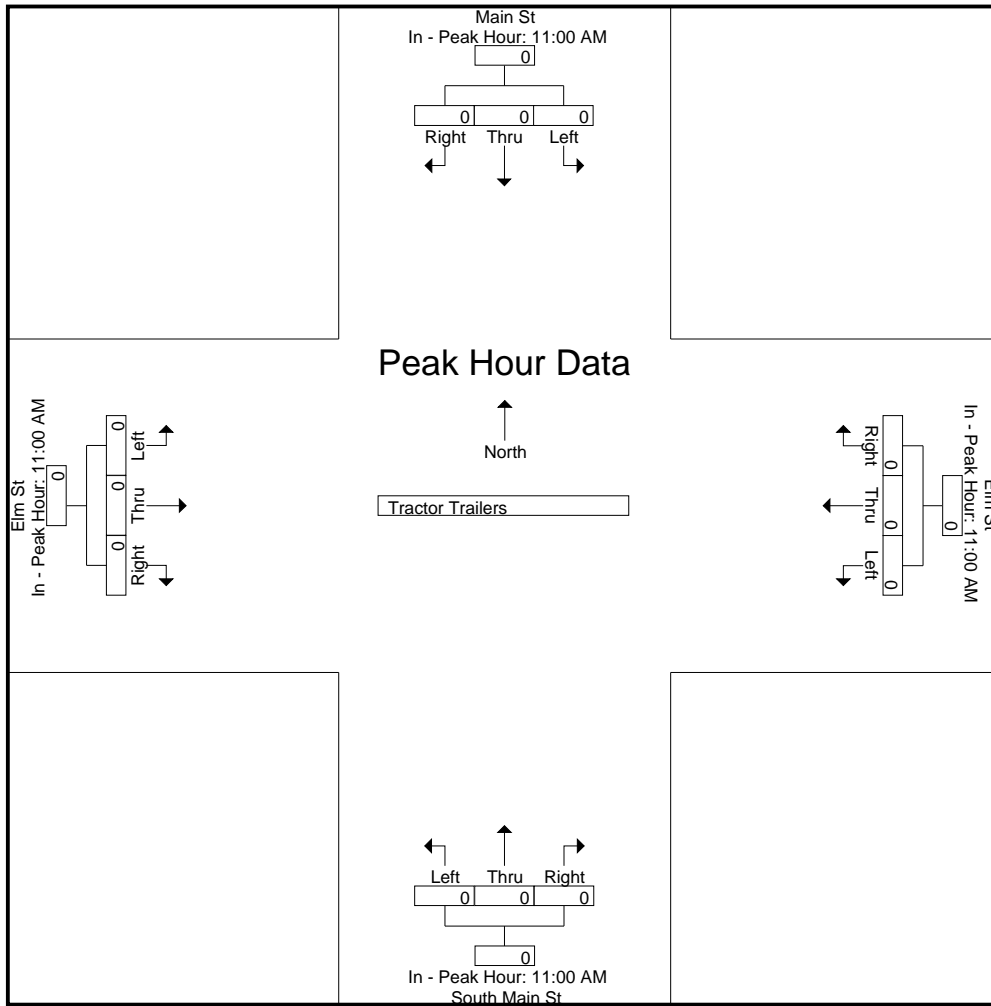
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



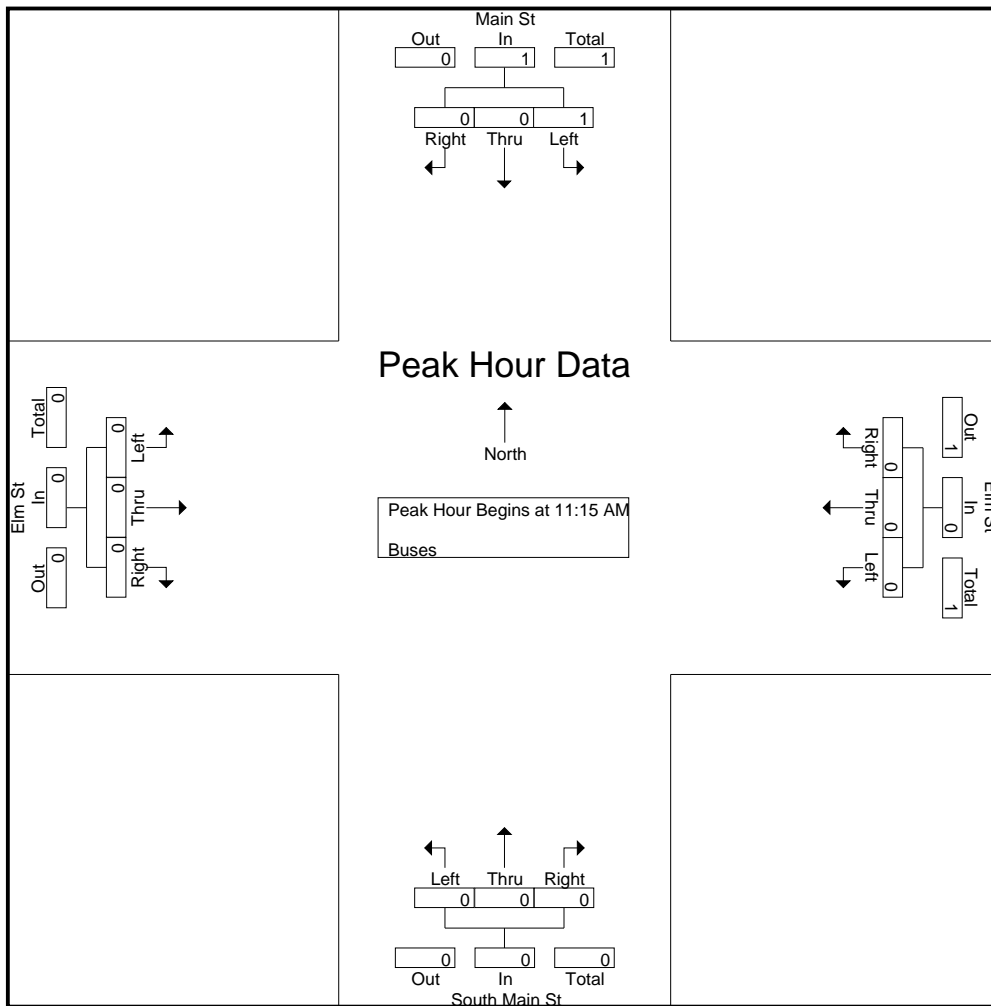
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



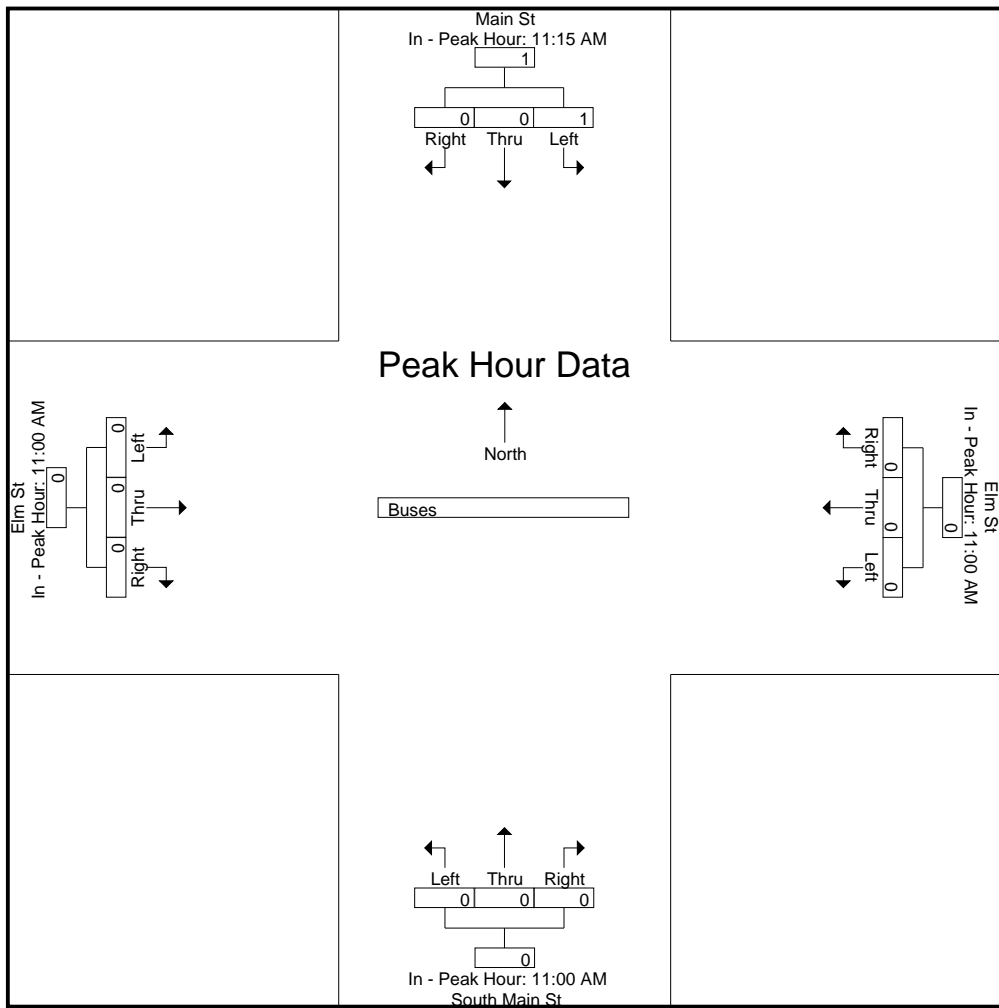
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



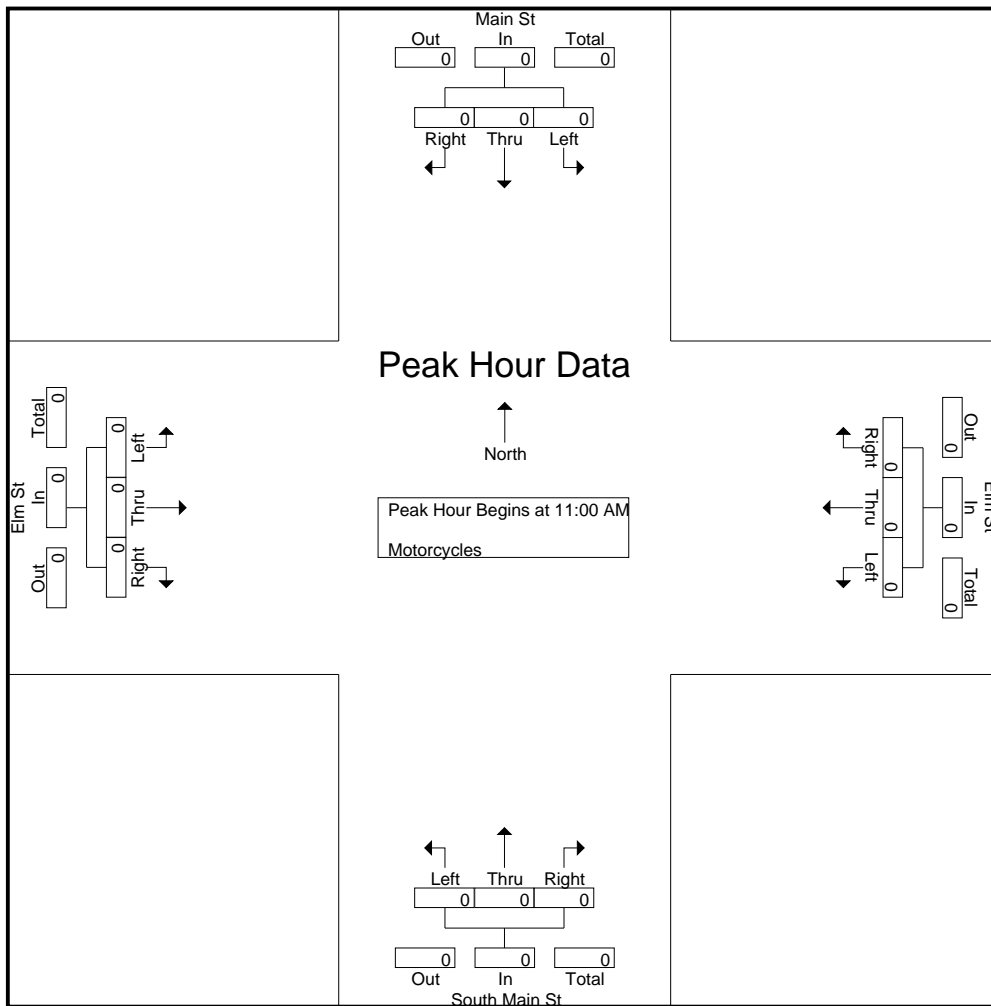
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:15 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



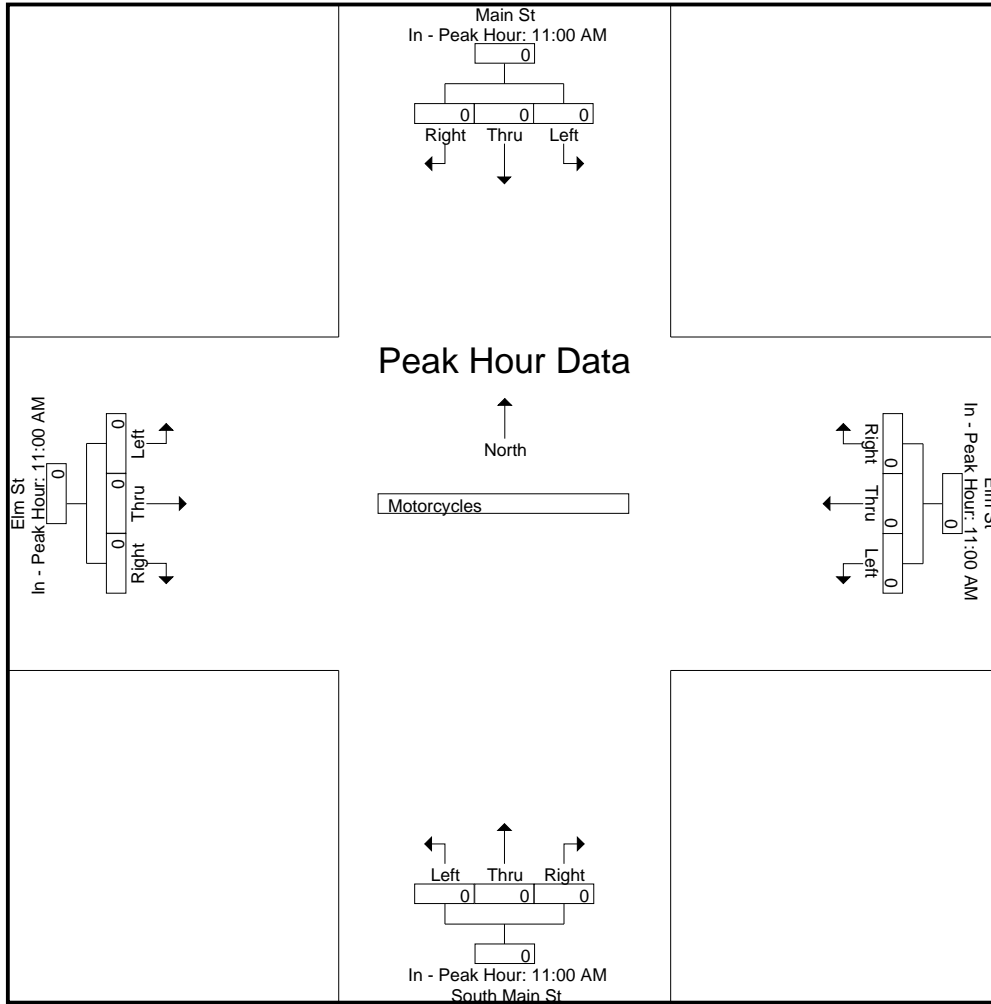
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Accurate Counts
978-664-2565

File Name : 187600S5
Site Code : 18760005
Start Date : 2/27/2021
Page No : 1

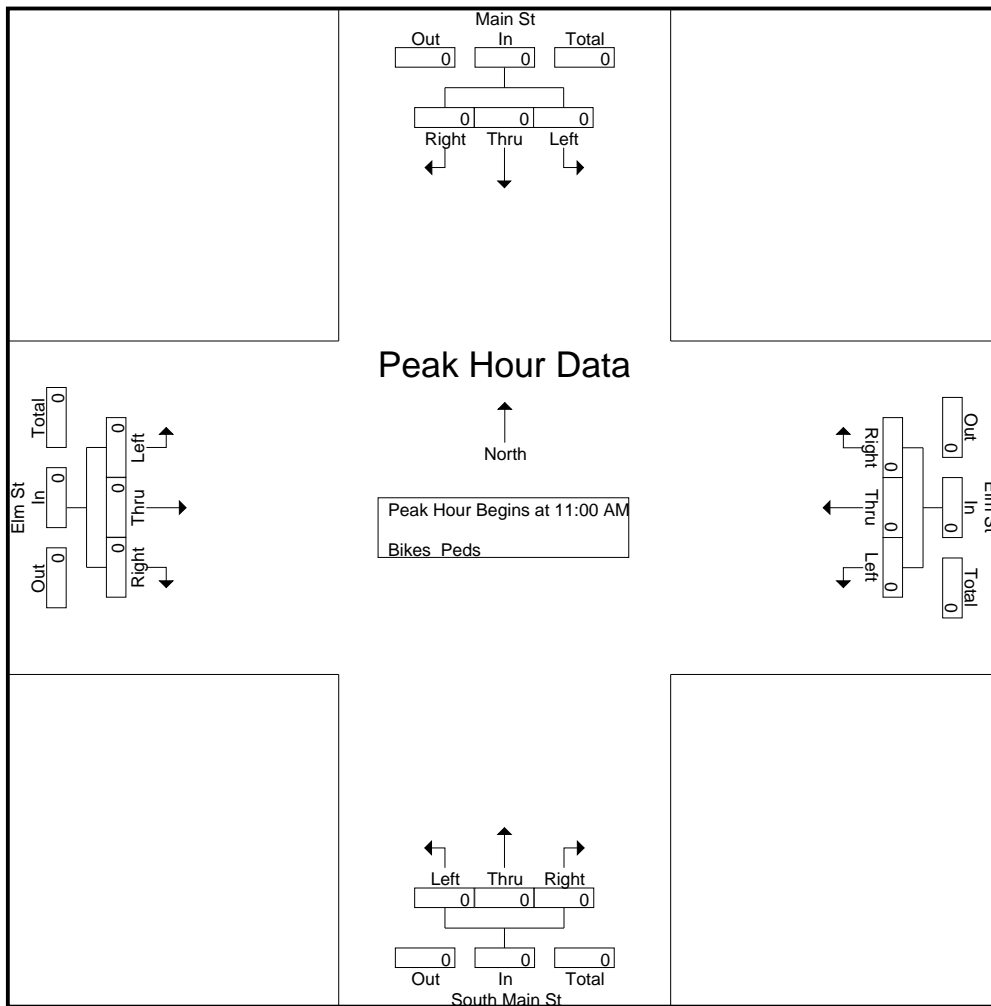
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

Groups Printed- Bikes Peds

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|----------|----------|----------|------------------|----------|----------|----------|--------------------------|----------|----------|----------|------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 11:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 8 | 0 | 8 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 |
| Grand Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 16 | 0 | 16 |
| Apprch % | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | |
| Total % | | | | | | | | | | | | | | | | | 100 | 0 | |

| Start Time | Main St From North | | | | Elm St From East | | | | South Main St From South | | | | Elm St From West | | | | Int. Total | |
|--|--------------------|----------|----------|------------|------------------|----------|----------|------------|--------------------------|----------|----------|------------|------------------|----------|----------|------------|------------|----------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

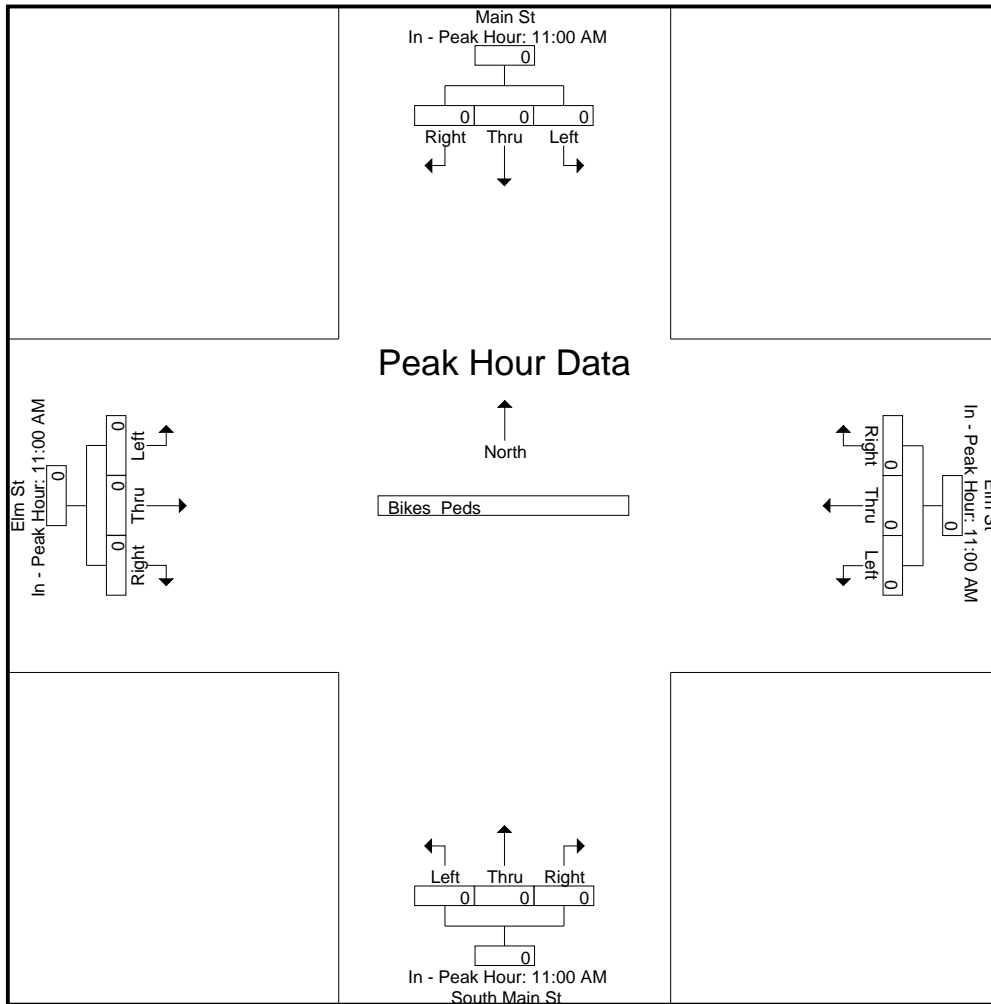
N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | | 11:00 AM | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain



APPENDIX

D

ITE TRIP GENERATION MANUAL



Land Use: 221

Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors). Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (Land Use 225), and mid-rise residential with 1st-floor commercial (Land Use 231) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the mid-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.46 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 95.7 percent of the total dwelling units were occupied.

Time-of-day distribution data for this land use are presented in Appendix A. For the eight general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 4:45 and 5:45 p.m., respectively.

For the four dense multi-use urban sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:15 and 5:15 p.m., respectively. For the three center city core sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 6:45 and 7:45 a.m. and 5:00 and 6:00 p.m., respectively.

For the six sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.46 residents per occupied dwelling unit.

For the five sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 95.7 percent of the units were occupied.

The average numbers of person trips per vehicle trip at the five center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 1.84 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.94 during Weekday, AM Peak Hour of Generator
- 2.07 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.59 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 32 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.90 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.90 during Weekday, AM Peak Hour of Generator
- 2.00 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.08 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 13 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.56 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.88 during Weekday, AM Peak Hour of Generator
- 1.70 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.07 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Delaware, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Ontario, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, and Wisconsin.

Source Numbers

168, 188, 204, 305, 306, 321, 357, 390, 436, 525, 530, 579, 638, 818, 857, 866, 901, 904, 910, 912, 918, 934, 936, 939, 944, 947, 948, 949, 959, 963, 964, 966, 967, 969, 970

Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

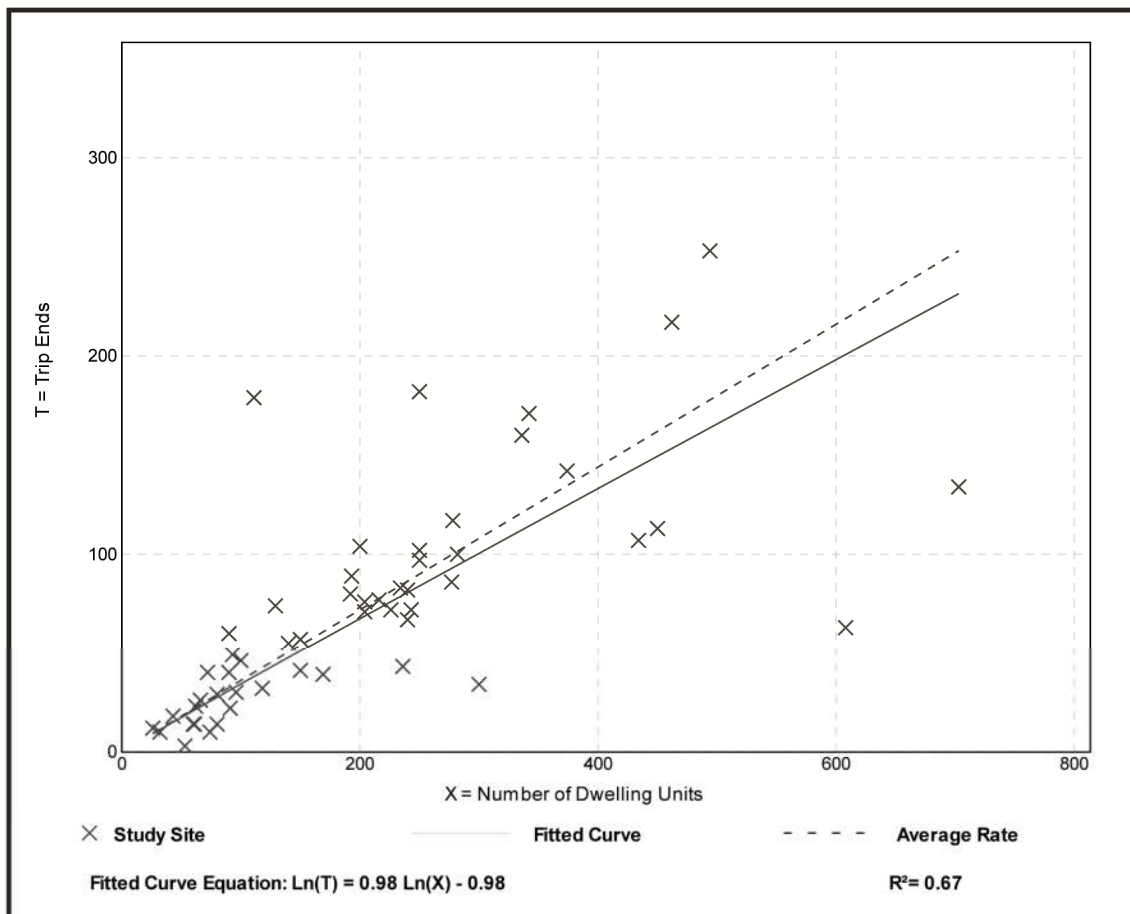
Setting/Location: General Urban/Suburban

Number of Studies: 53
 Avg. Num. of Dwelling Units: 207
 Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.36 | 0.06 - 1.61 | 0.19 |

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

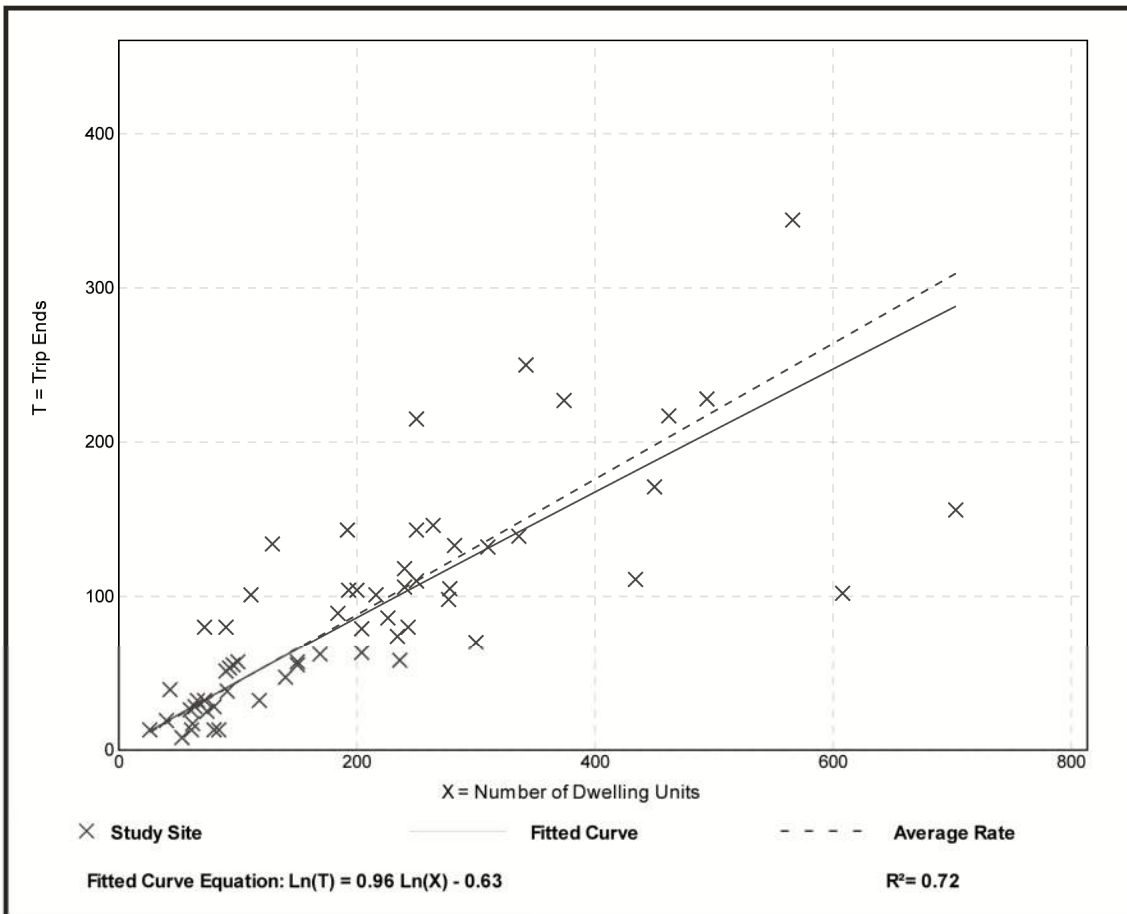
Setting/Location: General Urban/Suburban

Number of Studies: 60
 Avg. Num. of Dwelling Units: 208
 Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.44 | 0.15 - 1.11 | 0.19 |

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

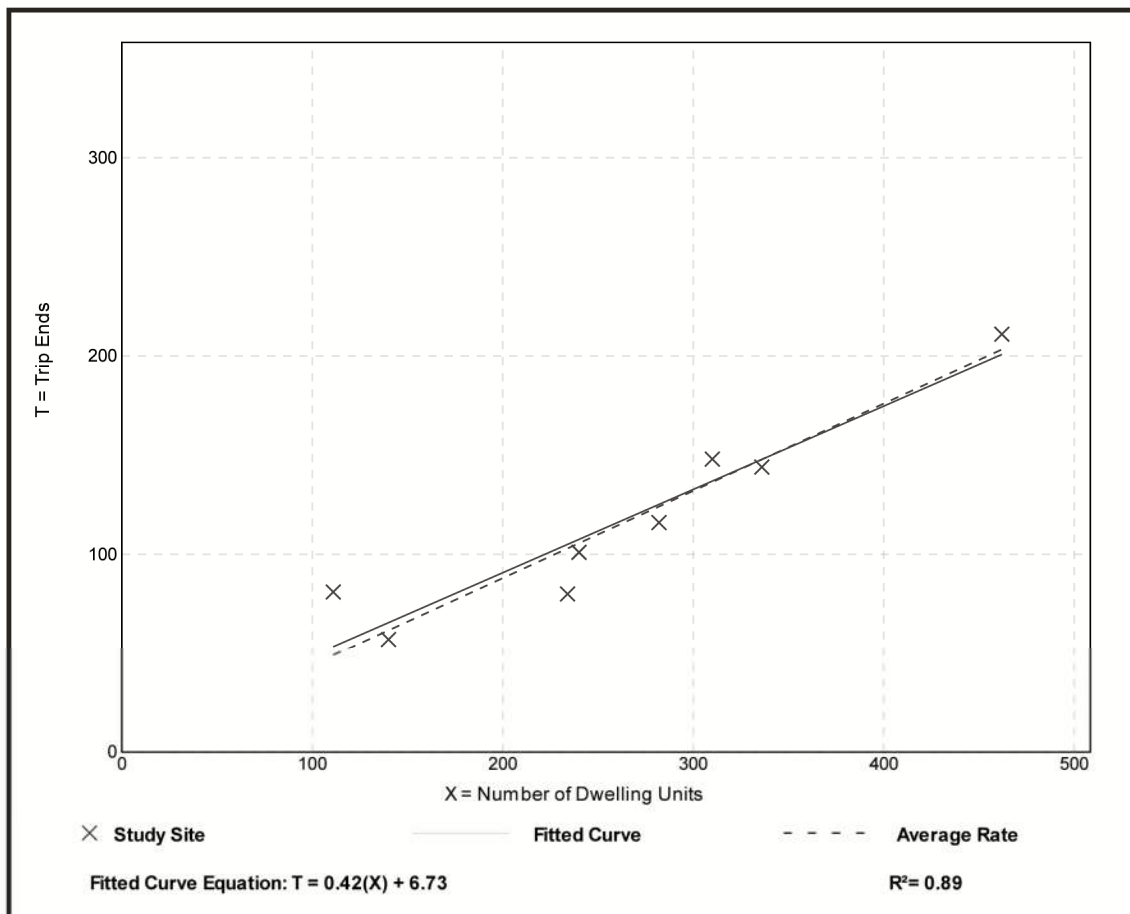
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 8
Avg. Num. of Dwelling Units: 264
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.44 | 0.34 - 0.73 | 0.08 |

Data Plot and Equation



APPENDIX

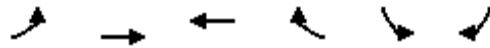
E

SYNCHRO REPORTS



Lanes, Volumes, Timings

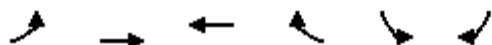
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 115 | 140 | 294 | 65 | 46 | 123 |
| Future Volume (vph) | 115 | 140 | 294 | 65 | 46 | 123 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.902 | |
| Fl _t Protected | 0.950 | | | | 0.987 | |
| Satd. Flow (prot) | 1593 | 1818 | 1722 | 1371 | 1621 | 0 |
| Fl _t Permitted | 0.398 | | | | 0.987 | |
| Satd. Flow (perm) | 667 | 1818 | 1722 | 1371 | 1621 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 68 | 160 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.88 | 0.88 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 2% | 1% | 3% | 6% | 0% | 6% |
| Adj. Flow (vph) | 126 | 154 | 334 | 74 | 60 | 160 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 126 | 154 | 334 | 74 | 220 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 21.4 | 21.4 | 14.3 | 14.3 | 8.6 | |
| Actuated g/C Ratio | 0.56 | 0.56 | 0.37 | 0.37 | 0.22 | |
| v/c Ratio | 0.24 | 0.15 | 0.52 | 0.13 | 0.45 | |
| Control Delay | 5.8 | 5.0 | 14.7 | 4.4 | 9.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 5.8 | 5.0 | 14.7 | 4.4 | 9.5 | |
| LOS | A | A | B | A | A | |
| Approach Delay | | 5.4 | 12.9 | | 9.5 | |
| Approach LOS | | A | B | | A | |
| Queue Length 50th (ft) | 11 | 13 | 61 | 1 | 12 | |
| Queue Length 95th (ft) | 34 | 40 | 134 | 19 | 45 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 518 | 1674 | 1304 | 1055 | 995 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.24 | 0.09 | 0.26 | 0.07 | 0.22 | |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 38.4 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.52 |
| Intersection Signal Delay: | 9.7 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 44.5% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |












Lanes, Volumes, Timings

4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings
5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 127 | 290 | 108 | 123 | 132 | 78 |
| Future Volume (vph) | 127 | 290 | 108 | 123 | 132 | 78 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.928 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1652 | 1492 | 1704 | 0 | 1745 | 1818 |
| Fl _t Permitted | 0.950 | | | | 0.362 | |
| Satd. Flow (perm) | 1652 | 1492 | 1704 | 0 | 665 | 1818 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 330 | 89 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.88 | 0.88 | 0.77 | 0.77 | 0.84 | 0.84 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 144 | 330 | 140 | 160 | 157 | 93 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 144 | 330 | 300 | 0 | 157 | 93 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings

5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 27.0 | 27.0 | 29.0 | | 14.0 | 43.0 |
| Total Split (%) | 38.6% | 38.6% | 41.4% | | 20.0% | 61.4% |
| Maximum Green (s) | 22.0 | 22.0 | 24.0 | | 9.0 | 38.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 9.8 | 9.8 | 11.4 | | 20.8 | 20.8 |
| Actuated g/C Ratio | 0.24 | 0.24 | 0.27 | | 0.50 | 0.50 |
| v/c Ratio | 0.37 | 0.55 | 0.56 | | 0.29 | 0.10 |
| Control Delay | 18.9 | 6.5 | 14.9 | | 6.9 | 5.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 18.9 | 6.5 | 14.9 | | 6.9 | 5.5 |
| LOS | B | A | B | | A | A |
| Approach Delay | 10.2 | | 14.9 | | | 6.4 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 30 | 0 | 43 | | 16 | 9 |
| Queue Length 95th (ft) | 79 | 48 | 91 | | 42 | 27 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 962 | 1007 | 1095 | | 604 | 1582 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.15 | 0.33 | 0.27 | | 0.26 | 0.06 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 41.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 10.7
 Intersection Capacity Utilization 40.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 159 | 221 | 8 | 12 | 159 | 29 | 35 | 43 | 13 | 29 | 32 | 144 |
| Future Volume (vph) | 159 | 221 | 8 | 12 | 159 | 29 | 35 | 43 | 13 | 29 | 32 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.995 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Fl _t Protected | 0.950 | | | | 0.996 | | | 0.978 | | | 0.977 | |
| Satd. Flow (prot) | 1787 | 1874 | 0 | 0 | 1875 | 1568 | 0 | 1777 | 1487 | 0 | 1856 | 1615 |
| Fl _t Permitted | 0.373 | | | | 0.952 | | | 0.819 | | | 0.806 | |
| Satd. Flow (perm) | 702 | 1874 | 0 | 0 | 1792 | 1568 | 0 | 1488 | 1487 | 0 | 1531 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | | 109 | | | 109 | | | 182 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 | 0.90 | 0.90 | 0.90 | 0.79 | 0.79 | 0.79 |
| Heavy Vehicles (%) | 1% | 0% | 25% | 0% | 1% | 3% | 0% | 2% | 5% | 0% | 0% | 0% |
| Adj. Flow (vph) | 175 | 243 | 9 | 14 | 185 | 34 | 39 | 48 | 14 | 37 | 41 | 182 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 175 | 252 | 0 | 0 | 199 | 34 | 0 | 87 | 14 | 0 | 78 | 182 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.5 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 15.0 | 42.0 | | 27.0 | 27.0 | 27.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 21.4% | 60.0% | | 38.6% | 38.6% | 38.6% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 10.0 | 37.0 | | 22.0 | 22.0 | 22.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 21.5 | 21.6 | | | 12.0 | 12.0 | | 9.7 | 9.7 | | 9.7 | 9.7 |
| Actuated g/C Ratio | 0.59 | 0.59 | | | 0.33 | 0.33 | | 0.26 | 0.26 | | 0.26 | 0.26 |
| v/c Ratio | 0.24 | 0.23 | | | 0.34 | 0.06 | | 0.22 | 0.03 | | 0.19 | 0.32 |
| Control Delay | 5.4 | 5.1 | | | 15.9 | 0.2 | | 17.3 | 0.2 | | 17.0 | 5.4 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 5.4 | 5.1 | | | 15.9 | 0.2 | | 17.3 | 0.2 | | 17.0 | 5.4 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 5.2 | | | 13.6 | | | 14.9 | | | 8.9 | |
| Approach LOS | | A | | | B | | | B | | | A | |
| Queue Length 50th (ft) | 16 | 23 | | | 40 | 0 | | 18 | 0 | | 16 | 0 |
| Queue Length 95th (ft) | 41 | 57 | | | 88 | 0 | | 51 | 0 | | 41 | 27 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 882 | 1668 | | | 1093 | 999 | | 935 | 975 | | 962 | 1083 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.15 | | | 0.18 | 0.03 | | 0.09 | 0.01 | | 0.08 | 0.17 |

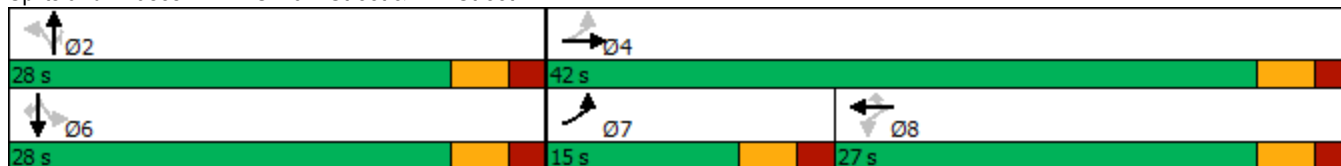
Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 36.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 9.0
 Intersection Capacity Utilization 44.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



Lanes, Volumes, Timings
 16: Church Street & Canal Street

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|--------------|-------|------|------------------------|-------|-------|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↘↙ | |
| Traffic Volume (vph) | 186 | 0 | 0 | 348 | 11 | 12 |
| Future Volume (vph) | 186 | 0 | 0 | 348 | 11 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.930 | |
| Fl _t Protected | | | | | 0.977 | |
| Satd. Flow (prot) | 1900 | 0 | 0 | 1845 | 1693 | 0 |
| Fl _t Permitted | | | | | 0.977 | |
| Satd. Flow (perm) | 1900 | 0 | 0 | 1845 | 1693 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 233 | | | 371 | 313 | |
| Travel Time (s) | 5.3 | | | 8.4 | 7.1 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.89 | 0.89 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 3% | 2% | 2% |
| Adj. Flow (vph) | 214 | 0 | 0 | 391 | 12 | 13 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 214 | 0 | 0 | 391 | 25 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 28.3% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 159 | 24 | 15 | 1 | 0 | 0 | 34 | 200 | 29 | 27 | 184 | 314 |
| Future Volume (vph) | 159 | 24 | 15 | 1 | 0 | 0 | 34 | 200 | 29 | 27 | 184 | 314 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | 1.00 |
| Frt | | 0.942 | | | | | | 0.985 | | | | 0.919 |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.994 | | | | 0.997 |
| Satd. Flow (prot) | 1805 | 1736 | 0 | 0 | 1805 | 0 | 0 | 1853 | 0 | 0 | 1731 | 0 |
| Flt Permitted | 0.755 | | | | 0.725 | | | 0.895 | | | | 0.973 |
| Satd. Flow (perm) | 1434 | 1736 | 0 | 0 | 1377 | 0 | 0 | 1669 | 0 | 0 | 1689 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 19 | | | | | | 15 | | | | 178 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | | 505 |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | | 11.5 |
| Confl. Peds. (#/hr) | | | | | | | | | | 2 | | |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.25 | 0.25 | 0.25 | 0.84 | 0.84 | 0.84 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 8% | 0% | 0% | 0% | 3% | 0% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 196 | 30 | 19 | 4 | 0 | 0 | 40 | 238 | 35 | 30 | 202 | 345 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 196 | 49 | 0 | 0 | 4 | 0 | 0 | 313 | 0 | 0 | 577 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Total Split (%) | 35.7% | 35.7% | | 35.7% | 35.7% | | 64.3% | 64.3% | | 64.3% | 64.3% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 12.1 | 12.1 | | | 11.6 | | | 21.0 | | | 21.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | | 0.32 | | | 0.57 | | | 0.57 | |
| v/c Ratio | 0.41 | 0.08 | | | 0.01 | | | 0.33 | | | 0.56 | |
| Control Delay | 16.5 | 9.8 | | | 13.0 | | | 8.0 | | | 8.1 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 16.5 | 9.8 | | | 13.0 | | | 8.0 | | | 8.1 | |
| LOS | B | A | | | B | | | A | | | A | |
| Approach Delay | | 15.1 | | | 13.0 | | | 8.0 | | | 8.1 | |
| Approach LOS | | B | | | B | | | A | | | A | |
| Queue Length 50th (ft) | 32 | 4 | | | 1 | | | 36 | | | 52 | |
| Queue Length 95th (ft) | 94 | 24 | | | 2 | | | 92 | | | 167 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 856 | 1044 | | | 822 | | | 1530 | | | 1562 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.23 | 0.05 | | | 0.00 | | | 0.20 | | | 0.37 | |

| Intersection Summary | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 36.8 |
| Natural Cycle: | 50 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.56 |
| Intersection Signal Delay: | 9.6 |
| Intersection Capacity Utilization: | 50.6% |
| Intersection LOS: | A |
| ICU Level of Service: | A |

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

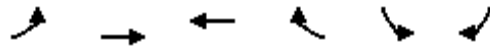
Analysis Period (min) 15

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

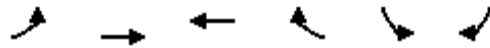
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 112 | 301 | 302 | 68 | 72 | 175 |
| Future Volume (vph) | 112 | 301 | 302 | 68 | 72 | 175 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.904 | |
| Fl _t Protected | 0.950 | | | | 0.986 | |
| Satd. Flow (prot) | 1624 | 1837 | 1739 | 1454 | 1694 | 0 |
| Fl _t Permitted | 0.340 | | | | 0.986 | |
| Satd. Flow (perm) | 581 | 1837 | 1739 | 1454 | 1694 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 69 | 175 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.86 | 0.86 | 0.80 | 0.80 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 130 | 350 | 378 | 85 | 79 | 192 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 130 | 350 | 378 | 85 | 271 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 22.5 | 22.5 | 15.1 | 15.1 | 9.0 | |
| Actuated g/C Ratio | 0.53 | 0.53 | 0.35 | 0.35 | 0.21 | |
| v/c Ratio | 0.29 | 0.36 | 0.61 | 0.15 | 0.55 | |
| Control Delay | 6.8 | 6.8 | 17.1 | 5.0 | 11.8 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 6.8 | 6.8 | 17.1 | 5.0 | 11.8 | |
| LOS | A | A | B | A | B | |
| Approach Delay | | 6.8 | 14.9 | | 11.8 | |
| Approach LOS | | A | B | | B | |
| Queue Length 50th (ft) | 12 | 36 | 74 | 3 | 20 | |
| Queue Length 95th (ft) | 37 | 93 | 143 | 20 | 85 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 442 | 1625 | 1254 | 1068 | 963 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.29 | 0.22 | 0.30 | 0.08 | 0.28 | |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 42.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 11.0
 Intersection Capacity Utilization 49.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A












Lanes, Volumes, Timings

4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings
5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 175 | 302 | 119 | 119 | 294 | 127 |
| Future Volume (vph) | 175 | 302 | 119 | 119 | 294 | 127 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | 0.932 | | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1685 | 1507 | 1712 | 0 | 1745 | 1837 |
| Flt Permitted | 0.950 | | | | 0.330 | |
| Satd. Flow (perm) | 1685 | 1507 | 1712 | 0 | 606 | 1837 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 360 | 75 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.84 | 0.84 | 0.78 | 0.78 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 208 | 360 | 153 | 153 | 320 | 138 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 208 | 360 | 306 | 0 | 320 | 138 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings

5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 24.0 | 24.0 | 27.0 | | 19.0 | 46.0 |
| Total Split (%) | 34.3% | 34.3% | 38.6% | | 27.1% | 65.7% |
| Maximum Green (s) | 19.0 | 19.0 | 22.0 | | 14.0 | 41.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 11.9 | 11.9 | 12.8 | | 28.8 | 28.8 |
| Actuated g/C Ratio | 0.23 | 0.23 | 0.25 | | 0.56 | 0.56 |
| v/c Ratio | 0.53 | 0.57 | 0.63 | | 0.55 | 0.13 |
| Control Delay | 24.2 | 6.8 | 20.0 | | 10.4 | 6.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 24.2 | 6.8 | 20.0 | | 10.4 | 6.2 |
| LOS | C | A | B | | B | A |
| Approach Delay | 13.1 | | 20.0 | | | 9.1 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 53 | 0 | 58 | | 42 | 16 |
| Queue Length 95th (ft) | 121 | 44 | 120 | | 105 | 46 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 657 | 807 | 814 | | 667 | 1498 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.45 | 0.38 | | 0.48 | 0.09 |

Intersection Summary





















Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 51.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 13.3
 Intersection Capacity Utilization 52.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Lanes, Volumes, Timings
 5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 127 | 220 | 14 | 22 | 281 | 37 | 42 | 74 | 25 | 45 | 81 | 176 |
| Future Volume (vph) | 127 | 220 | 14 | 22 | 281 | 37 | 42 | 74 | 25 | 45 | 81 | 176 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.991 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.996 | | | 0.982 | | | 0.982 | |
| Satd. Flow (prot) | 1787 | 1883 | 0 | 0 | 1892 | 1615 | 0 | 1804 | 1561 | 0 | 1866 | 1615 |
| Flt Permitted | 0.375 | | | | 0.964 | | | 0.822 | | | 0.824 | |
| Satd. Flow (perm) | 705 | 1883 | 0 | 0 | 1832 | 1615 | 0 | 1510 | 1561 | 0 | 1566 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 109 | | | 109 | | | 200 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.85 | 0.82 | 0.82 | 0.82 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 138 | 239 | 15 | 26 | 331 | 44 | 51 | 90 | 30 | 51 | 92 | 200 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 138 | 254 | 0 | 0 | 357 | 44 | 0 | 141 | 30 | 0 | 143 | 200 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 11.0 | 42.0 | | 31.0 | 31.0 | 31.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 15.7% | 60.0% | | 44.3% | 44.3% | 44.3% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 6.0 | 37.0 | | 26.0 | 26.0 | 26.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 23.5 | 23.5 | | | 15.9 | 15.9 | | 11.2 | 11.2 | | 11.2 | 11.2 |
| Actuated g/C Ratio | 0.57 | 0.57 | | | 0.38 | 0.38 | | 0.27 | 0.27 | | 0.27 | 0.27 |
| v/c Ratio | 0.23 | 0.24 | | | 0.51 | 0.06 | | 0.34 | 0.06 | | 0.34 | 0.34 |
| Control Delay | 6.2 | 5.9 | | | 15.7 | 0.2 | | 19.5 | 0.2 | | 19.3 | 5.3 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 6.2 | 5.9 | | | 15.7 | 0.2 | | 19.5 | 0.2 | | 19.3 | 5.3 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 6.0 | | | 14.0 | | | 16.1 | | | 11.1 | |
| Approach LOS | | A | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 14 | 27 | | | 75 | 0 | | 31 | 0 | | 31 | 0 |
| Queue Length 95th (ft) | 41 | 70 | | | 149 | 0 | | 76 | 0 | | 83 | 39 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 611 | 1554 | | | 1170 | 1071 | | 888 | 963 | | 921 | 1032 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.16 | | | 0.31 | 0.04 | | 0.16 | 0.03 | | 0.16 | 0.19 |

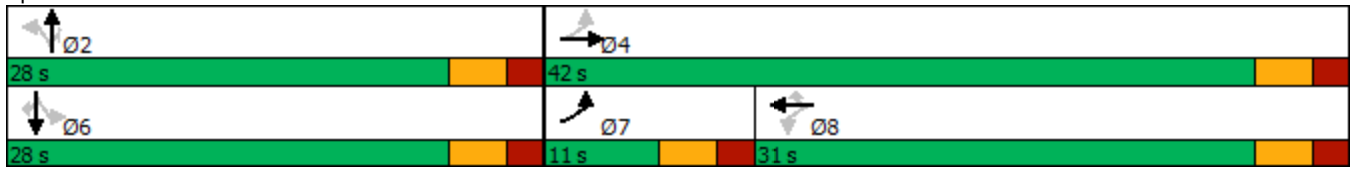
Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 41.3 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.51 |
| Intersection Signal Delay: | 11.1 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 54.4% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |










Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



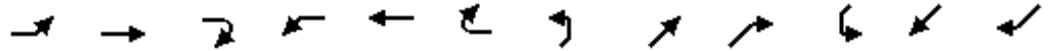
Lanes, Volumes, Timings
 16: Church Street & Canal Street

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (vph) | 373 | 0 | 0 | 357 | 13 | 14 |
| Future Volume (vph) | 373 | 0 | 0 | 357 | 13 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.928 | |
| Fl _t Protected | | | | | 0.977 | |
| Satd. Flow (prot) | 1900 | 0 | 0 | 1881 | 1723 | 0 |
| Fl _t Permitted | | | | | 0.977 | |
| Satd. Flow (perm) | 1900 | 0 | 0 | 1881 | 1723 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 233 | | | 371 | 313 | |
| Travel Time (s) | 5.3 | | | 8.4 | 7.1 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.83 | 0.83 | 0.84 | 0.84 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 0% | 0% |
| Adj. Flow (vph) | 429 | 0 | 0 | 430 | 15 | 17 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 429 | 0 | 0 | 430 | 32 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 29.6% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 330 | 10 | 47 | 1 | 0 | 1 | 31 | 253 | 6 | 6 | 292 | 326 |
| Future Volume (vph) | 330 | 10 | 47 | 1 | 0 | 1 | 31 | 253 | 6 | 6 | 292 | 326 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.876 | | | 0.932 | | | 0.997 | | | 0.929 | |
| Flt Protected | 0.950 | | | | 0.976 | | | 0.995 | | | 0.999 | |
| Satd. Flow (prot) | 1805 | 1664 | 0 | 0 | 1728 | 0 | 0 | 1848 | 0 | 0 | 1763 | 0 |
| Flt Permitted | 0.755 | | | | 0.931 | | | 0.906 | | | 0.996 | |
| Satd. Flow (perm) | 1434 | 1664 | 0 | 0 | 1649 | 0 | 0 | 1683 | 0 | 0 | 1758 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 52 | | | 31 | | | 2 | | | 116 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | 505 | |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | 11.5 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 | 0.50 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 363 | 11 | 52 | 2 | 0 | 2 | 34 | 275 | 7 | 7 | 324 | 362 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 363 | 63 | 0 | 0 | 4 | 0 | 0 | 316 | 0 | 0 | 693 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 41.0 | 41.0 | | 41.0 | 41.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 58.6% | 58.6% | | 58.6% | 58.6% | |
| Maximum Green (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.4 | 18.4 | | | 18.4 | | | 24.8 | | | 24.8 | |
| Actuated g/C Ratio | 0.34 | 0.34 | | | 0.34 | | | 0.46 | | | 0.46 | |
| v/c Ratio | 0.75 | 0.11 | | | 0.01 | | | 0.41 | | | 0.80 | |
| Control Delay | 29.0 | 6.9 | | | 0.0 | | | 11.7 | | | 18.4 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 29.0 | 6.9 | | | 0.0 | | | 11.7 | | | 18.4 | |
| LOS | C | A | | | A | | | B | | | B | |
| Approach Delay | | 25.7 | | | | | | 11.7 | | | 18.4 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Queue Length 50th (ft) | 103 | 2 | | | 0 | | | 64 | | | 149 | |
| Queue Length 95th (ft) | #260 | 26 | | | 0 | | | 127 | | | 306 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 691 | 829 | | | 811 | | | 1179 | | | 1266 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.53 | 0.08 | | | 0.00 | | | 0.27 | | | 0.55 | |

Intersection Summary

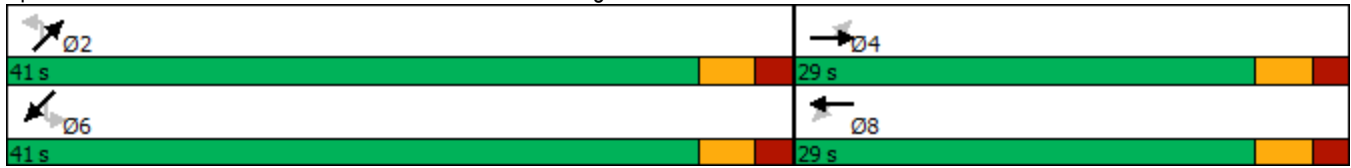
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 54.1
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 19.0
 Intersection Capacity Utilization 69.8%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

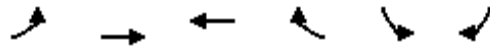
Queue shown is maximum after two cycles.

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

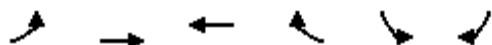
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 134 | 235 | 308 | 92 | 80 | 154 |
| Future Volume (vph) | 134 | 235 | 308 | 92 | 80 | 154 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.911 | |
| Fl _t Protected | 0.950 | | | | 0.983 | |
| Satd. Flow (prot) | 1624 | 1837 | 1756 | 1454 | 1701 | 0 |
| Fl _t Permitted | 0.367 | | | | 0.983 | |
| Satd. Flow (perm) | 628 | 1837 | 1756 | 1454 | 1701 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 91 | 139 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.85 | 0.85 | 0.90 | 0.90 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 0% |
| Adj. Flow (vph) | 158 | 276 | 342 | 102 | 94 | 181 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 158 | 276 | 342 | 102 | 275 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 22.0 | 22.0 | 14.6 | 14.6 | 9.7 | |
| Actuated g/C Ratio | 0.52 | 0.52 | 0.34 | 0.34 | 0.23 | |
| v/c Ratio | 0.35 | 0.29 | 0.57 | 0.18 | 0.56 | |
| Control Delay | 7.8 | 6.7 | 16.9 | 4.7 | 13.6 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 7.8 | 6.7 | 16.9 | 4.7 | 13.6 | |
| LOS | A | A | B | A | B | |
| Approach Delay | | 7.1 | 14.1 | | 13.6 | |
| Approach LOS | | A | B | | B | |
| Queue Length 50th (ft) | 16 | 30 | 68 | 2 | 28 | |
| Queue Length 95th (ft) | 45 | 75 | 155 | 27 | 88 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 451 | 1626 | 1265 | 1073 | 941 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.35 | 0.17 | 0.27 | 0.10 | 0.29 | |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 42.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 11.3
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A












Lanes, Volumes, Timings

4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings
5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 157 | 305 | 136 | 145 | 224 | 136 |
| Future Volume (vph) | 157 | 305 | 136 | 145 | 224 | 136 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.930 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1685 | 1507 | 1708 | 0 | 1745 | 1837 |
| Fl _t Permitted | 0.950 | | | | 0.314 | |
| Satd. Flow (perm) | 1685 | 1507 | 1708 | 0 | 577 | 1837 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 359 | 85 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.85 | 0.85 | 0.84 | 0.84 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 185 | 359 | 162 | 173 | 241 | 146 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 185 | 359 | 335 | 0 | 241 | 146 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings

5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 25.0 | 25.0 | 30.0 | | 15.0 | 45.0 |
| Total Split (%) | 35.7% | 35.7% | 42.9% | | 21.4% | 64.3% |
| Maximum Green (s) | 20.0 | 20.0 | 25.0 | | 10.0 | 40.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 11.0 | 11.0 | 13.1 | | 27.0 | 27.0 |
| Actuated g/C Ratio | 0.23 | 0.23 | 0.27 | | 0.56 | 0.56 |
| v/c Ratio | 0.48 | 0.58 | 0.64 | | 0.45 | 0.14 |
| Control Delay | 22.3 | 6.8 | 18.2 | | 8.8 | 6.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 22.3 | 6.8 | 18.2 | | 8.8 | 6.0 |
| LOS | C | A | B | | A | A |
| Approach Delay | 12.1 | | 18.2 | | | 7.8 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 44 | 0 | 58 | | 28 | 16 |
| Queue Length 95th (ft) | 104 | 45 | 131 | | 76 | 47 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 725 | 853 | 958 | | 573 | 1534 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.42 | 0.35 | | 0.42 | 0.10 |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 48.5 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.64 |
| Intersection Signal Delay: | 12.4 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 49.6% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 140 | 196 | 18 | 13 | 225 | 53 | 41 | 88 | 22 | 62 | 68 | 163 |
| Future Volume (vph) | 140 | 196 | 18 | 13 | 225 | 53 | 41 | 88 | 22 | 62 | 68 | 163 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.987 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.997 | | | 0.984 | | | 0.977 | |
| Satd. Flow (prot) | 1805 | 1875 | 0 | 0 | 1894 | 1615 | 0 | 1796 | 1561 | 0 | 1856 | 1615 |
| Flt Permitted | 0.416 | | | | 0.972 | | | 0.847 | | | 0.770 | |
| Satd. Flow (perm) | 790 | 1875 | 0 | 0 | 1847 | 1615 | 0 | 1546 | 1561 | 0 | 1463 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 10 | | | | 109 | | | 109 | | | 179 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.93 | 0.93 | 0.93 | 0.81 | 0.81 | 0.81 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 171 | 239 | 22 | 14 | 242 | 57 | 51 | 109 | 27 | 68 | 75 | 179 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 171 | 261 | 0 | 0 | 256 | 57 | 0 | 160 | 27 | 0 | 143 | 179 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 13.0 | 42.0 | | 29.0 | 29.0 | 29.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 18.6% | 60.0% | | 41.4% | 41.4% | 41.4% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 8.0 | 37.0 | | 24.0 | 24.0 | 24.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 21.3 | 21.3 | | | 11.8 | 11.8 | | 10.3 | 10.3 | | 10.3 | 10.3 |
| Actuated g/C Ratio | 0.50 | 0.50 | | | 0.28 | 0.28 | | 0.24 | 0.24 | | 0.24 | 0.24 |
| v/c Ratio | 0.29 | 0.28 | | | 0.50 | 0.11 | | 0.43 | 0.06 | | 0.41 | 0.34 |
| Control Delay | 7.0 | 6.5 | | | 18.2 | 1.5 | | 19.8 | 0.2 | | 19.7 | 5.4 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 7.0 | 6.5 | | | 18.2 | 1.5 | | 19.8 | 0.2 | | 19.7 | 5.4 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 6.7 | | | 15.2 | | | 17.0 | | | 11.7 | |
| Approach LOS | | A | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 18 | 28 | | | 55 | 0 | | 35 | 0 | | 31 | 0 |
| Queue Length 95th (ft) | 45 | 64 | | | 122 | 7 | | 78 | 0 | | 81 | 38 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 609 | 1571 | | | 1132 | 1032 | | 912 | 966 | | 863 | 1026 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.17 | | | 0.23 | 0.06 | | 0.18 | 0.03 | | 0.17 | 0.17 |

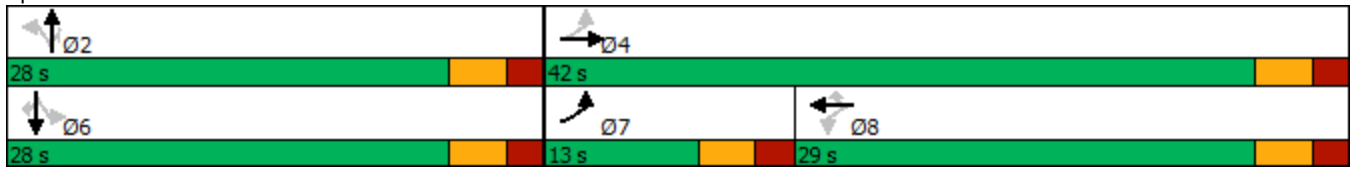
Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 42.5 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.50 |
| Intersection Signal Delay: | 11.7 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 50.1% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



Lanes, Volumes, Timings
 16: Church Street & Canal Street

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|--------------|-------|------|------------------------|-------|-------|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↘↙ | |
| Traffic Volume (vph) | 315 | 0 | 0 | 387 | 13 | 12 |
| Future Volume (vph) | 315 | 0 | 0 | 387 | 13 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.935 | |
| Fl _t Protected | | | | | 0.975 | |
| Satd. Flow (prot) | 1900 | 0 | 0 | 1900 | 1698 | 0 |
| Fl _t Permitted | | | | | 0.975 | |
| Satd. Flow (perm) | 1900 | 0 | 0 | 1900 | 1698 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 233 | | | 371 | 313 | |
| Travel Time (s) | 5.3 | | | 8.4 | 7.1 | |
| Peak Hour Factor | 0.89 | 0.89 | 0.90 | 0.90 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 2% | 2% |
| Adj. Flow (vph) | 354 | 0 | 0 | 430 | 14 | 13 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 354 | 0 | 0 | 430 | 27 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 30.4% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 270 | 25 | 32 | 2 | 0 | 0 | 43 | 210 | 27 | 17 | 257 | 344 |
| Future Volume (vph) | 270 | 25 | 32 | 2 | 0 | 0 | 43 | 210 | 27 | 17 | 257 | 344 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.915 | | | | | | 0.987 | | | 0.925 | |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.992 | | | 0.999 | |
| Satd. Flow (prot) | 1805 | 1738 | 0 | 0 | 1805 | 0 | 0 | 1860 | 0 | 0 | 1756 | 0 |
| Flt Permitted | 0.752 | | | | 0.717 | | | 0.873 | | | 0.987 | |
| Satd. Flow (perm) | 1429 | 1738 | 0 | 0 | 1362 | 0 | 0 | 1637 | 0 | 0 | 1735 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 35 | | | | | | 11 | | | 133 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | 505 | |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | 11.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.25 | 0.25 | 0.25 | 0.88 | 0.88 | 0.88 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 293 | 27 | 35 | 8 | 0 | 0 | 49 | 239 | 31 | 18 | 271 | 362 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 293 | 62 | 0 | 0 | 8 | 0 | 0 | 319 | 0 | 0 | 651 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 41.0 | 41.0 | | 41.0 | 41.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 58.6% | 58.6% | | 58.6% | 58.6% | |
| Maximum Green (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 15.4 | 15.4 | | | 15.4 | | | 21.9 | | | 21.9 | |
| Actuated g/C Ratio | 0.32 | 0.32 | | | 0.32 | | | 0.45 | | | 0.45 | |
| v/c Ratio | 0.64 | 0.11 | | | 0.02 | | | 0.43 | | | 0.76 | |
| Control Delay | 23.3 | 8.9 | | | 14.0 | | | 10.9 | | | 15.4 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 23.3 | 8.9 | | | 14.0 | | | 10.9 | | | 15.4 | |
| LOS | C | A | | | B | | | B | | | B | |
| Approach Delay | | 20.8 | | | 14.0 | | | 10.9 | | | 15.4 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 67 | 5 | | | 2 | | | 50 | | | 101 | |
| Queue Length 95th (ft) | 180 | 31 | | | 3 | | | 123 | | | 268 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 782 | 967 | | | 745 | | | 1262 | | | 1366 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.37 | 0.06 | | | 0.01 | | | 0.25 | | | 0.48 | |

| Intersection Summary | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 48.3 |
| Natural Cycle: | 55 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.76 |
| Intersection Signal Delay: | 15.8 |
| Intersection Capacity Utilization | 59.6% |
| Analysis Period (min) | 15 |
| Intersection LOS: | B |
| ICU Level of Service | B |

Lanes, Volumes, Timings

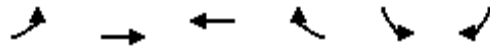
17: Elm Street & Canal Street & McLaughlin's Service

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

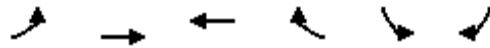
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 115 | 140 | 294 | 65 | 46 | 123 |
| Future Volume (vph) | 115 | 140 | 294 | 65 | 46 | 123 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.902 | |
| Fl _t Protected | 0.950 | | | | 0.987 | |
| Satd. Flow (prot) | 1593 | 1818 | 1722 | 1371 | 1621 | 0 |
| Fl _t Permitted | 0.398 | | | | 0.987 | |
| Satd. Flow (perm) | 667 | 1818 | 1722 | 1371 | 1621 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 68 | 160 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.88 | 0.88 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 2% | 1% | 3% | 6% | 0% | 6% |
| Adj. Flow (vph) | 126 | 154 | 334 | 74 | 60 | 160 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 126 | 154 | 334 | 74 | 220 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 21.4 | 21.4 | 14.3 | 14.3 | 8.6 | |
| Actuated g/C Ratio | 0.56 | 0.56 | 0.37 | 0.37 | 0.22 | |
| v/c Ratio | 0.24 | 0.15 | 0.52 | 0.13 | 0.45 | |
| Control Delay | 5.8 | 5.0 | 14.7 | 4.4 | 9.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 5.8 | 5.0 | 14.7 | 4.4 | 9.5 | |
| LOS | A | A | B | A | A | |
| Approach Delay | | 5.4 | 12.9 | | 9.5 | |
| Approach LOS | | A | B | | A | |
| Queue Length 50th (ft) | 11 | 13 | 61 | 1 | 12 | |
| Queue Length 95th (ft) | 34 | 40 | 134 | 19 | 45 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 518 | 1674 | 1304 | 1055 | 995 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.24 | 0.09 | 0.26 | 0.07 | 0.22 | |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 38.4 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.52 |
| Intersection Signal Delay: | 9.7 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 44.5% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings












4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings

5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 127 | 290 | 108 | 123 | 132 | 78 |
| Future Volume (vph) | 127 | 290 | 108 | 123 | 132 | 78 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.928 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1652 | 1492 | 1704 | 0 | 1745 | 1818 |
| Fl _t Permitted | 0.950 | | | | 0.362 | |
| Satd. Flow (perm) | 1652 | 1492 | 1704 | 0 | 665 | 1818 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 330 | 89 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.88 | 0.88 | 0.77 | 0.77 | 0.84 | 0.84 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 144 | 330 | 140 | 160 | 157 | 93 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 144 | 330 | 300 | 0 | 157 | 93 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings

5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 27.0 | 27.0 | 29.0 | | 14.0 | 43.0 |
| Total Split (%) | 38.6% | 38.6% | 41.4% | | 20.0% | 61.4% |
| Maximum Green (s) | 22.0 | 22.0 | 24.0 | | 9.0 | 38.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 9.8 | 9.8 | 11.4 | | 20.8 | 20.8 |
| Actuated g/C Ratio | 0.24 | 0.24 | 0.27 | | 0.50 | 0.50 |
| v/c Ratio | 0.37 | 0.55 | 0.56 | | 0.29 | 0.10 |
| Control Delay | 18.9 | 6.5 | 14.9 | | 6.9 | 5.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 18.9 | 6.5 | 14.9 | | 6.9 | 5.5 |
| LOS | B | A | B | | A | A |
| Approach Delay | 10.2 | | 14.9 | | | 6.4 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 30 | 0 | 43 | | 16 | 9 |
| Queue Length 95th (ft) | 79 | 48 | 91 | | 42 | 27 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 962 | 1007 | 1095 | | 604 | 1582 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.15 | 0.33 | 0.27 | | 0.26 | 0.06 |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 41.6 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.56 |
| Intersection Signal Delay: | 10.7 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 40.1% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 159 | 221 | 8 | 12 | 159 | 29 | 35 | 43 | 13 | 29 | 32 | 144 |
| Future Volume (vph) | 159 | 221 | 8 | 12 | 159 | 29 | 35 | 43 | 13 | 29 | 32 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.995 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Fl _t Protected | 0.950 | | | | 0.996 | | | 0.978 | | | 0.977 | |
| Satd. Flow (prot) | 1787 | 1874 | 0 | 0 | 1875 | 1568 | 0 | 1777 | 1487 | 0 | 1856 | 1615 |
| Fl _t Permitted | 0.373 | | | | 0.952 | | | 0.819 | | | 0.806 | |
| Satd. Flow (perm) | 702 | 1874 | 0 | 0 | 1792 | 1568 | 0 | 1488 | 1487 | 0 | 1531 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | | 109 | | | 109 | | | 182 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 | 0.90 | 0.90 | 0.90 | 0.79 | 0.79 | 0.79 |
| Heavy Vehicles (%) | 1% | 0% | 25% | 0% | 1% | 3% | 0% | 2% | 5% | 0% | 0% | 0% |
| Adj. Flow (vph) | 175 | 243 | 9 | 14 | 185 | 34 | 39 | 48 | 14 | 37 | 41 | 182 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 175 | 252 | 0 | 0 | 199 | 34 | 0 | 87 | 14 | 0 | 78 | 182 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 15.0 | 42.0 | | 27.0 | 27.0 | 27.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 21.4% | 60.0% | | 38.6% | 38.6% | 38.6% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 10.0 | 37.0 | | 22.0 | 22.0 | 22.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 21.5 | 21.6 | | | 12.0 | 12.0 | | 9.7 | 9.7 | | 9.7 | 9.7 |
| Actuated g/C Ratio | 0.59 | 0.59 | | | 0.33 | 0.33 | | 0.26 | 0.26 | | 0.26 | 0.26 |
| v/c Ratio | 0.24 | 0.23 | | | 0.34 | 0.06 | | 0.22 | 0.03 | | 0.19 | 0.32 |
| Control Delay | 5.4 | 5.1 | | | 15.9 | 0.2 | | 17.3 | 0.2 | | 17.0 | 5.4 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 5.4 | 5.1 | | | 15.9 | 0.2 | | 17.3 | 0.2 | | 17.0 | 5.4 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 5.2 | | | 13.6 | | | 14.9 | | | 8.9 | |
| Approach LOS | | A | | | B | | | B | | | A | |
| Queue Length 50th (ft) | 16 | 23 | | | 40 | 0 | | 18 | 0 | | 16 | 0 |
| Queue Length 95th (ft) | 41 | 57 | | | 88 | 0 | | 51 | 0 | | 41 | 27 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 882 | 1668 | | | 1093 | 999 | | 935 | 975 | | 962 | 1083 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.15 | | | 0.18 | 0.03 | | 0.09 | 0.01 | | 0.08 | 0.17 |

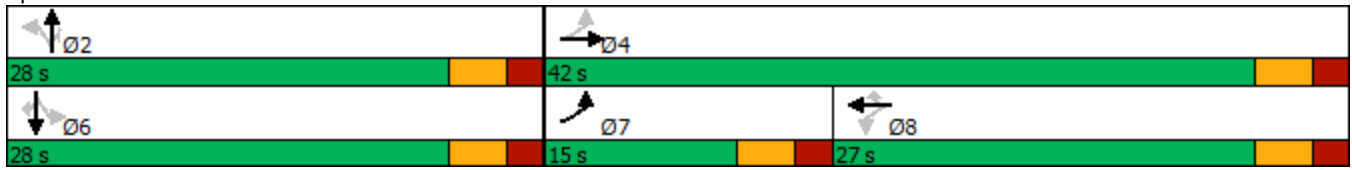
Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 36.7 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.34 |
| Intersection Signal Delay: | 9.0 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 44.5% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



Lanes, Volumes, Timings
 16: Church Street & Canal Street













| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|--------------|-------|------|------------------------|-------|-------|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↘↙ | |
| Traffic Volume (vph) | 186 | 0 | 0 | 348 | 11 | 12 |
| Future Volume (vph) | 186 | 0 | 0 | 348 | 11 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.930 | |
| Fl _t Protected | | | | | 0.977 | |
| Satd. Flow (prot) | 1900 | 0 | 0 | 1845 | 1693 | 0 |
| Fl _t Permitted | | | | | 0.977 | |
| Satd. Flow (perm) | 1900 | 0 | 0 | 1845 | 1693 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 233 | | | 371 | 313 | |
| Travel Time (s) | 5.3 | | | 8.4 | 7.1 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.89 | 0.89 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 3% | 2% | 2% |
| Adj. Flow (vph) | 214 | 0 | 0 | 391 | 12 | 13 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 214 | 0 | 0 | 391 | 25 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 28.3% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 159 | 24 | 15 | 1 | 0 | 0 | 34 | 200 | 29 | 27 | 184 | 314 |
| Future Volume (vph) | 159 | 24 | 15 | 1 | 0 | 0 | 34 | 200 | 29 | 27 | 184 | 314 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | 1.00 |
| Frt | | 0.942 | | | | | | 0.985 | | | | 0.919 |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.994 | | | | 0.997 |
| Satd. Flow (prot) | 1805 | 1736 | 0 | 0 | 1805 | 0 | 0 | 1853 | 0 | 0 | 1731 | 0 |
| Flt Permitted | 0.755 | | | | 0.725 | | | 0.895 | | | | 0.973 |
| Satd. Flow (perm) | 1434 | 1736 | 0 | 0 | 1377 | 0 | 0 | 1669 | 0 | 0 | 1689 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 19 | | | | | | 15 | | | | 178 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | | 505 |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | | 11.5 |
| Confl. Peds. (#/hr) | | | | | | | | | | 2 | | |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.25 | 0.25 | 0.25 | 0.84 | 0.84 | 0.84 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 8% | 0% | 0% | 0% | 3% | 0% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 196 | 30 | 19 | 4 | 0 | 0 | 40 | 238 | 35 | 30 | 202 | 345 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 196 | 49 | 0 | 0 | 4 | 0 | 0 | 313 | 0 | 0 | 577 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Total Split (%) | 35.7% | 35.7% | | 35.7% | 35.7% | | 64.3% | 64.3% | | 64.3% | 64.3% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 12.1 | 12.1 | | | 11.6 | | | 21.0 | | | 21.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | | 0.32 | | | 0.57 | | | 0.57 | |
| v/c Ratio | 0.41 | 0.08 | | | 0.01 | | | 0.33 | | | 0.56 | |
| Control Delay | 16.5 | 9.8 | | | 13.0 | | | 8.0 | | | 8.1 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 16.5 | 9.8 | | | 13.0 | | | 8.0 | | | 8.1 | |
| LOS | B | A | | | B | | | A | | | A | |
| Approach Delay | | 15.1 | | | 13.0 | | | 8.0 | | | 8.1 | |
| Approach LOS | | B | | | B | | | A | | | A | |
| Queue Length 50th (ft) | 32 | 4 | | | 1 | | | 36 | | | 52 | |
| Queue Length 95th (ft) | 94 | 24 | | | 2 | | | 92 | | | 167 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 856 | 1044 | | | 822 | | | 1530 | | | 1562 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.23 | 0.05 | | | 0.00 | | | 0.20 | | | 0.37 | |
| Intersection Summary | | | | | | | | | | | | |
| Area Type: | Other | | | | | | | | | | | |
| Cycle Length: | 70 | | | | | | | | | | | |
| Actuated Cycle Length: | 36.8 | | | | | | | | | | | |
| Natural Cycle: | 50 | | | | | | | | | | | |
| Control Type: | Actuated-Uncoordinated | | | | | | | | | | | |
| Maximum v/c Ratio: | 0.56 | | | | | | | | | | | |
| Intersection Signal Delay: | 9.6 | | | | | | Intersection LOS: A | | | | | |
| Intersection Capacity Utilization: | 50.6% | | | | | | ICU Level of Service A | | | | | |

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

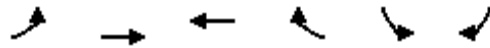
Analysis Period (min) 15

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

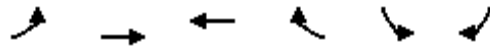
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 112 | 301 | 302 | 68 | 72 | 175 |
| Future Volume (vph) | 112 | 301 | 302 | 68 | 72 | 175 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.904 | |
| Fl _t Protected | 0.950 | | | | 0.986 | |
| Satd. Flow (prot) | 1624 | 1837 | 1739 | 1454 | 1694 | 0 |
| Fl _t Permitted | 0.340 | | | | 0.986 | |
| Satd. Flow (perm) | 581 | 1837 | 1739 | 1454 | 1694 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 69 | 175 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.86 | 0.86 | 0.80 | 0.80 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 130 | 350 | 378 | 85 | 79 | 192 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 130 | 350 | 378 | 85 | 271 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 22.5 | 22.5 | 15.1 | 15.1 | 9.0 | |
| Actuated g/C Ratio | 0.53 | 0.53 | 0.35 | 0.35 | 0.21 | |
| v/c Ratio | 0.29 | 0.36 | 0.61 | 0.15 | 0.55 | |
| Control Delay | 6.8 | 6.8 | 17.1 | 5.0 | 11.8 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 6.8 | 6.8 | 17.1 | 5.0 | 11.8 | |
| LOS | A | A | B | A | B | |
| Approach Delay | | 6.8 | 14.9 | | 11.8 | |
| Approach LOS | | A | B | | B | |
| Queue Length 50th (ft) | 12 | 36 | 74 | 3 | 20 | |
| Queue Length 95th (ft) | 37 | 93 | 143 | 20 | 85 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 442 | 1625 | 1254 | 1068 | 963 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.29 | 0.22 | 0.30 | 0.08 | 0.28 | |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 42.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 11.0
 Intersection Capacity Utilization 49.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A












Lanes, Volumes, Timings

4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings
 5: S. Main Street/S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 175 | 302 | 119 | 119 | 294 | 127 |
| Future Volume (vph) | 175 | 302 | 119 | 119 | 294 | 127 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.932 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1685 | 1507 | 1712 | 0 | 1745 | 1837 |
| Fl _t Permitted | 0.950 | | | | 0.330 | |
| Satd. Flow (perm) | 1685 | 1507 | 1712 | 0 | 606 | 1837 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 360 | 75 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.84 | 0.84 | 0.78 | 0.78 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 208 | 360 | 153 | 153 | 320 | 138 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 208 | 360 | 306 | 0 | 320 | 138 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings
 5: S. Main Street/S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 24.0 | 24.0 | 27.0 | | 19.0 | 46.0 |
| Total Split (%) | 34.3% | 34.3% | 38.6% | | 27.1% | 65.7% |
| Maximum Green (s) | 19.0 | 19.0 | 22.0 | | 14.0 | 41.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 11.9 | 11.9 | 12.8 | | 28.8 | 28.8 |
| Actuated g/C Ratio | 0.23 | 0.23 | 0.25 | | 0.56 | 0.56 |
| v/c Ratio | 0.53 | 0.57 | 0.63 | | 0.55 | 0.13 |
| Control Delay | 24.2 | 6.8 | 20.0 | | 10.4 | 6.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 24.2 | 6.8 | 20.0 | | 10.4 | 6.2 |
| LOS | C | A | B | | B | A |
| Approach Delay | 13.1 | | 20.0 | | | 9.1 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 53 | 0 | 58 | | 42 | 16 |
| Queue Length 95th (ft) | 121 | 44 | 120 | | 105 | 46 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 657 | 807 | 814 | | 667 | 1498 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.45 | 0.38 | | 0.48 | 0.09 |

Intersection Summary





















| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 51.2 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.63 |
| Intersection Signal Delay: | 13.3 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 52.0% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings
 5: S. Main Street/S Main Street & Canal Street













Splits and Phases: 5: S. Main Street/S Main Street & Canal Street



Lanes, Volumes, Timings
 12: S Main Street/S. Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 127 | 220 | 14 | 22 | 281 | 37 | 42 | 74 | 25 | 45 | 81 | 176 |
| Future Volume (vph) | 127 | 220 | 14 | 22 | 281 | 37 | 42 | 74 | 25 | 45 | 81 | 176 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.991 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Fl _t Protected | 0.950 | | | | 0.996 | | | 0.982 | | | 0.982 | |
| Satd. Flow (prot) | 1787 | 1883 | 0 | 0 | 1892 | 1615 | 0 | 1804 | 1561 | 0 | 1866 | 1615 |
| Fl _t Permitted | 0.375 | | | | 0.964 | | | 0.822 | | | 0.824 | |
| Satd. Flow (perm) | 705 | 1883 | 0 | 0 | 1832 | 1615 | 0 | 1510 | 1561 | 0 | 1566 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 109 | | | 109 | | | 200 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.85 | 0.82 | 0.82 | 0.82 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 138 | 239 | 15 | 26 | 331 | 44 | 51 | 90 | 30 | 51 | 92 | 200 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 138 | 254 | 0 | 0 | 357 | 44 | 0 | 141 | 30 | 0 | 143 | 200 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street/S. Main Street & Elm Street

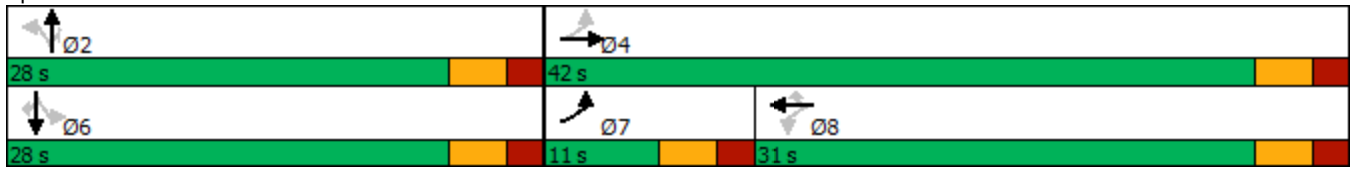
| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 11.0 | 42.0 | | 31.0 | 31.0 | 31.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 15.7% | 60.0% | | 44.3% | 44.3% | 44.3% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 6.0 | 37.0 | | 26.0 | 26.0 | 26.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 23.5 | 23.5 | | | 15.9 | 15.9 | | 11.2 | 11.2 | | 11.2 | 11.2 |
| Actuated g/C Ratio | 0.57 | 0.57 | | | 0.38 | 0.38 | | 0.27 | 0.27 | | 0.27 | 0.27 |
| v/c Ratio | 0.23 | 0.24 | | | 0.51 | 0.06 | | 0.34 | 0.06 | | 0.34 | 0.34 |
| Control Delay | 6.2 | 5.9 | | | 15.7 | 0.2 | | 19.5 | 0.2 | | 19.3 | 5.3 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 6.2 | 5.9 | | | 15.7 | 0.2 | | 19.5 | 0.2 | | 19.3 | 5.3 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 6.0 | | | 14.0 | | | 16.1 | | | 11.1 | |
| Approach LOS | | A | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 14 | 27 | | | 75 | 0 | | 31 | 0 | | 31 | 0 |
| Queue Length 95th (ft) | 41 | 70 | | | 149 | 0 | | 76 | 0 | | 83 | 39 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 611 | 1554 | | | 1170 | 1071 | | 888 | 963 | | 921 | 1032 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.16 | | | 0.31 | 0.04 | | 0.16 | 0.03 | | 0.16 | 0.19 |

| Intersection Summary | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 41.3 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.51 |
| Intersection Signal Delay: | 11.1 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 54.4% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings

12: S Main Street/S. Main Street & Elm Street

Splits and Phases: 12: S Main Street/S. Main Street & Elm Street



Lanes, Volumes, Timings
 16: Church Street & Canal Street

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|--------------|-------|------|------------------------|-------|-------|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↘↙ | |
| Traffic Volume (vph) | 373 | 0 | 0 | 357 | 13 | 14 |
| Future Volume (vph) | 373 | 0 | 0 | 357 | 13 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.928 | |
| Fl _t Protected | | | | | 0.977 | |
| Satd. Flow (prot) | 1900 | 0 | 0 | 1881 | 1723 | 0 |
| Fl _t Permitted | | | | | 0.977 | |
| Satd. Flow (perm) | 1900 | 0 | 0 | 1881 | 1723 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 233 | | | 371 | 313 | |
| Travel Time (s) | 5.3 | | | 8.4 | 7.1 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.83 | 0.83 | 0.84 | 0.84 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 0% | 0% |
| Adj. Flow (vph) | 429 | 0 | 0 | 430 | 15 | 17 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 429 | 0 | 0 | 430 | 32 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 29.6% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 330 | 10 | 47 | 1 | 0 | 1 | 31 | 253 | 6 | 6 | 292 | 326 |
| Future Volume (vph) | 330 | 10 | 47 | 1 | 0 | 1 | 31 | 253 | 6 | 6 | 292 | 326 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.876 | | | 0.932 | | | 0.997 | | | 0.929 | |
| Flt Protected | 0.950 | | | | 0.976 | | | 0.995 | | | 0.999 | |
| Satd. Flow (prot) | 1805 | 1664 | 0 | 0 | 1728 | 0 | 0 | 1848 | 0 | 0 | 1763 | 0 |
| Flt Permitted | 0.755 | | | | 0.931 | | | 0.906 | | | 0.996 | |
| Satd. Flow (perm) | 1434 | 1664 | 0 | 0 | 1649 | 0 | 0 | 1683 | 0 | 0 | 1758 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 52 | | | 31 | | | 2 | | | 116 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | 505 | |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | 11.5 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 | 0.50 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 363 | 11 | 52 | 2 | 0 | 2 | 34 | 275 | 7 | 7 | 324 | 362 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 363 | 63 | 0 | 0 | 4 | 0 | 0 | 316 | 0 | 0 | 693 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 41.0 | 41.0 | | 41.0 | 41.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 58.6% | 58.6% | | 58.6% | 58.6% | |
| Maximum Green (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.4 | 18.4 | | | 18.4 | | | 24.8 | | | 24.8 | |
| Actuated g/C Ratio | 0.34 | 0.34 | | | 0.34 | | | 0.46 | | | 0.46 | |
| v/c Ratio | 0.75 | 0.11 | | | 0.01 | | | 0.41 | | | 0.80 | |
| Control Delay | 29.0 | 6.9 | | | 0.0 | | | 11.7 | | | 18.4 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 29.0 | 6.9 | | | 0.0 | | | 11.7 | | | 18.4 | |
| LOS | C | A | | | A | | | B | | | B | |
| Approach Delay | | 25.7 | | | | | | 11.7 | | | 18.4 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Queue Length 50th (ft) | 103 | 2 | | | 0 | | | 64 | | | 149 | |
| Queue Length 95th (ft) | #260 | 26 | | | 0 | | | 127 | | | 306 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 691 | 829 | | | 811 | | | 1179 | | | 1266 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.53 | 0.08 | | | 0.00 | | | 0.27 | | | 0.55 | |

Intersection Summary

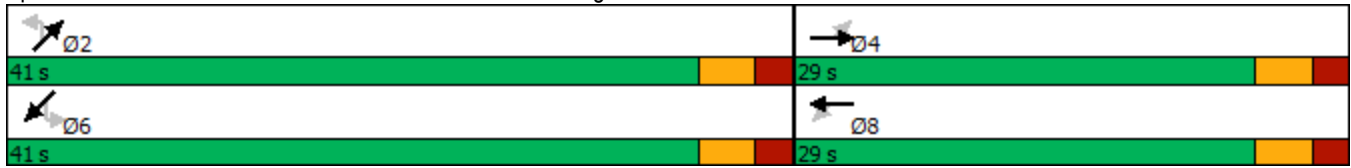
| | |
|---|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 54.1 |
| Natural Cycle: | 55 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.80 |
| Intersection Signal Delay: | 19.0 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 69.8% |
| ICU Level of Service: | C |
| Analysis Period (min): | 15 |
| # 95th percentile volume exceeds capacity, queue may be longer. | |

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

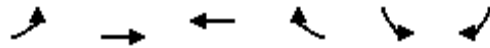
Queue shown is maximum after two cycles.

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

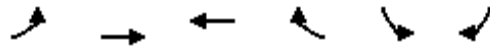
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 134 | 235 | 308 | 92 | 80 | 154 |
| Future Volume (vph) | 134 | 235 | 308 | 92 | 80 | 154 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.911 | |
| Fl _t Protected | 0.950 | | | | 0.983 | |
| Satd. Flow (prot) | 1624 | 1837 | 1756 | 1454 | 1701 | 0 |
| Fl _t Permitted | 0.367 | | | | 0.983 | |
| Satd. Flow (perm) | 628 | 1837 | 1756 | 1454 | 1701 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 91 | 139 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.85 | 0.85 | 0.90 | 0.90 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 0% |
| Adj. Flow (vph) | 158 | 276 | 342 | 102 | 94 | 181 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 158 | 276 | 342 | 102 | 275 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 22.0 | 22.0 | 14.6 | 14.6 | 9.7 | |
| Actuated g/C Ratio | 0.52 | 0.52 | 0.34 | 0.34 | 0.23 | |
| v/c Ratio | 0.35 | 0.29 | 0.57 | 0.18 | 0.56 | |
| Control Delay | 7.8 | 6.7 | 16.9 | 4.7 | 13.6 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 7.8 | 6.7 | 16.9 | 4.7 | 13.6 | |
| LOS | A | A | B | A | B | |
| Approach Delay | | 7.1 | 14.1 | | 13.6 | |
| Approach LOS | | A | B | | B | |
| Queue Length 50th (ft) | 16 | 30 | 68 | 2 | 28 | |
| Queue Length 95th (ft) | 45 | 75 | 155 | 27 | 88 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 451 | 1626 | 1265 | 1073 | 941 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.35 | 0.17 | 0.27 | 0.10 | 0.29 | |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 42.7 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.57 |
| Intersection Signal Delay: | 11.3 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 50.0% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings












4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings

5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 157 | 305 | 136 | 145 | 224 | 136 |
| Future Volume (vph) | 157 | 305 | 136 | 145 | 224 | 136 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.930 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1685 | 1507 | 1708 | 0 | 1745 | 1837 |
| Fl _t Permitted | 0.950 | | | | 0.314 | |
| Satd. Flow (perm) | 1685 | 1507 | 1708 | 0 | 577 | 1837 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 359 | 85 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.85 | 0.85 | 0.84 | 0.84 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 185 | 359 | 162 | 173 | 241 | 146 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 185 | 359 | 335 | 0 | 241 | 146 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings

5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 25.0 | 25.0 | 30.0 | | 15.0 | 45.0 |
| Total Split (%) | 35.7% | 35.7% | 42.9% | | 21.4% | 64.3% |
| Maximum Green (s) | 20.0 | 20.0 | 25.0 | | 10.0 | 40.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 11.0 | 11.0 | 13.1 | | 27.0 | 27.0 |
| Actuated g/C Ratio | 0.23 | 0.23 | 0.27 | | 0.56 | 0.56 |
| v/c Ratio | 0.48 | 0.58 | 0.64 | | 0.45 | 0.14 |
| Control Delay | 22.3 | 6.8 | 18.2 | | 8.8 | 6.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 22.3 | 6.8 | 18.2 | | 8.8 | 6.0 |
| LOS | C | A | B | | A | A |
| Approach Delay | 12.1 | | 18.2 | | | 7.8 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 44 | 0 | 58 | | 28 | 16 |
| Queue Length 95th (ft) | 104 | 45 | 131 | | 76 | 47 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 725 | 853 | 958 | | 573 | 1534 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.42 | 0.35 | | 0.42 | 0.10 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 48.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 12.4
 Intersection Capacity Utilization 49.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 140 | 196 | 18 | 13 | 225 | 53 | 41 | 88 | 22 | 62 | 68 | 163 |
| Future Volume (vph) | 140 | 196 | 18 | 13 | 225 | 53 | 41 | 88 | 22 | 62 | 68 | 163 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.987 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.997 | | | 0.984 | | | 0.977 | |
| Satd. Flow (prot) | 1805 | 1875 | 0 | 0 | 1894 | 1615 | 0 | 1796 | 1561 | 0 | 1856 | 1615 |
| Flt Permitted | 0.416 | | | | 0.972 | | | 0.847 | | | 0.770 | |
| Satd. Flow (perm) | 790 | 1875 | 0 | 0 | 1847 | 1615 | 0 | 1546 | 1561 | 0 | 1463 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 10 | | | | 109 | | | 109 | | | 179 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.93 | 0.93 | 0.93 | 0.81 | 0.81 | 0.81 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 171 | 239 | 22 | 14 | 242 | 57 | 51 | 109 | 27 | 68 | 75 | 179 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 171 | 261 | 0 | 0 | 256 | 57 | 0 | 160 | 27 | 0 | 143 | 179 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 13.0 | 42.0 | | 29.0 | 29.0 | 29.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 18.6% | 60.0% | | 41.4% | 41.4% | 41.4% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 8.0 | 37.0 | | 24.0 | 24.0 | 24.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 21.3 | 21.3 | | | 11.8 | 11.8 | | 10.3 | 10.3 | | 10.3 | 10.3 |
| Actuated g/C Ratio | 0.50 | 0.50 | | | 0.28 | 0.28 | | 0.24 | 0.24 | | 0.24 | 0.24 |
| v/c Ratio | 0.29 | 0.28 | | | 0.50 | 0.11 | | 0.43 | 0.06 | | 0.41 | 0.34 |
| Control Delay | 7.0 | 6.5 | | | 18.2 | 1.5 | | 19.8 | 0.2 | | 19.7 | 5.4 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 7.0 | 6.5 | | | 18.2 | 1.5 | | 19.8 | 0.2 | | 19.7 | 5.4 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 6.7 | | | 15.2 | | | 17.0 | | | 11.7 | |
| Approach LOS | | A | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 18 | 28 | | | 55 | 0 | | 35 | 0 | | 31 | 0 |
| Queue Length 95th (ft) | 45 | 64 | | | 122 | 7 | | 78 | 0 | | 81 | 38 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 609 | 1571 | | | 1132 | 1032 | | 912 | 966 | | 863 | 1026 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.17 | | | 0.23 | 0.06 | | 0.18 | 0.03 | | 0.17 | 0.17 |

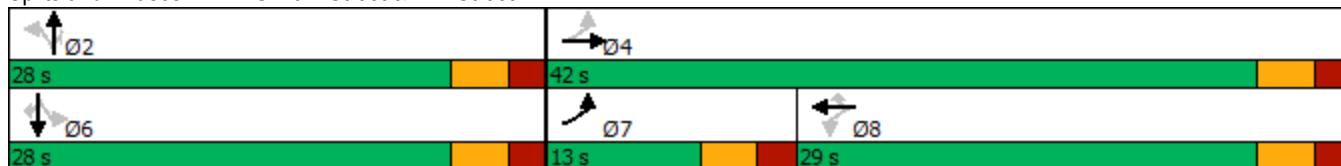
Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 42.5 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.50 |
| Intersection Signal Delay: | 11.7 |
| Intersection Capacity Utilization: | 50.1% |
| Analysis Period (min): | 15 |
| Intersection LOS: | B |
| ICU Level of Service: | A |







Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



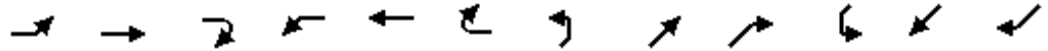
Lanes, Volumes, Timings
 16: Church Street & Canal Street

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↑ | |
| Traffic Volume (vph) | 315 | 0 | 0 | 387 | 13 | 12 |
| Future Volume (vph) | 315 | 0 | 0 | 387 | 13 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.935 | |
| Fl _t Protected | | | | | 0.975 | |
| Satd. Flow (prot) | 1900 | 0 | 0 | 1900 | 1698 | 0 |
| Fl _t Permitted | | | | | 0.975 | |
| Satd. Flow (perm) | 1900 | 0 | 0 | 1900 | 1698 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 233 | | | 371 | 313 | |
| Travel Time (s) | 5.3 | | | 8.4 | 7.1 | |
| Peak Hour Factor | 0.89 | 0.89 | 0.90 | 0.90 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 2% | 2% |
| Adj. Flow (vph) | 354 | 0 | 0 | 430 | 14 | 13 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 354 | 0 | 0 | 430 | 27 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 30.4% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 270 | 25 | 32 | 2 | 0 | 0 | 43 | 210 | 27 | 17 | 257 | 344 |
| Future Volume (vph) | 270 | 25 | 32 | 2 | 0 | 0 | 43 | 210 | 27 | 17 | 257 | 344 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.915 | | | | | | 0.987 | | | 0.925 | |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.992 | | | 0.999 | |
| Satd. Flow (prot) | 1805 | 1738 | 0 | 0 | 1805 | 0 | 0 | 1860 | 0 | 0 | 1756 | 0 |
| Flt Permitted | 0.752 | | | | 0.717 | | | 0.873 | | | 0.987 | |
| Satd. Flow (perm) | 1429 | 1738 | 0 | 0 | 1362 | 0 | 0 | 1637 | 0 | 0 | 1735 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 35 | | | | | | 11 | | | 133 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | 505 | |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | 11.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.25 | 0.25 | 0.25 | 0.88 | 0.88 | 0.88 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 293 | 27 | 35 | 8 | 0 | 0 | 49 | 239 | 31 | 18 | 271 | 362 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 293 | 62 | 0 | 0 | 8 | 0 | 0 | 319 | 0 | 0 | 651 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 41.0 | 41.0 | | 41.0 | 41.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 58.6% | 58.6% | | 58.6% | 58.6% | |
| Maximum Green (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 15.4 | 15.4 | | | 15.4 | | | 21.9 | | | 21.9 | |
| Actuated g/C Ratio | 0.32 | 0.32 | | | 0.32 | | | 0.45 | | | 0.45 | |
| v/c Ratio | 0.64 | 0.11 | | | 0.02 | | | 0.43 | | | 0.76 | |
| Control Delay | 23.3 | 8.9 | | | 14.0 | | | 10.9 | | | 15.4 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 23.3 | 8.9 | | | 14.0 | | | 10.9 | | | 15.4 | |
| LOS | C | A | | | B | | | B | | | B | |
| Approach Delay | | 20.8 | | | 14.0 | | | 10.9 | | | 15.4 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 67 | 5 | | | 2 | | | 50 | | | 101 | |
| Queue Length 95th (ft) | 180 | 31 | | | 3 | | | 123 | | | 268 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 782 | 967 | | | 745 | | | 1262 | | | 1366 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.37 | 0.06 | | | 0.01 | | | 0.25 | | | 0.48 | |

Intersection Summary

| | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 48.3 |
| Natural Cycle: | 55 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.76 |
| Intersection Signal Delay: | 15.8 |
| Intersection Capacity Utilization | 59.6% |
| Analysis Period (min) | 15 |
| Intersection LOS: | B |
| ICU Level of Service | B |

Lanes, Volumes, Timings

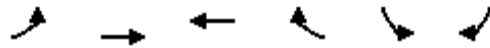
17: Elm Street & Canal Street & McLaughlin's Service

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

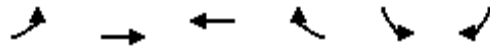
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 115 | 142 | 302 | 67 | 46 | 123 |
| Future Volume (vph) | 115 | 142 | 302 | 67 | 46 | 123 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.902 | |
| Fl _t Protected | 0.950 | | | | 0.987 | |
| Satd. Flow (prot) | 1593 | 1818 | 1722 | 1371 | 1621 | 0 |
| Fl _t Permitted | 0.392 | | | | 0.987 | |
| Satd. Flow (perm) | 657 | 1818 | 1722 | 1371 | 1621 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 68 | 160 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.88 | 0.88 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 2% | 1% | 3% | 6% | 0% | 6% |
| Adj. Flow (vph) | 126 | 156 | 343 | 76 | 60 | 160 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 126 | 156 | 343 | 76 | 220 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 21.7 | 21.7 | 14.6 | 14.6 | 8.7 | |
| Actuated g/C Ratio | 0.56 | 0.56 | 0.38 | 0.38 | 0.23 | |
| v/c Ratio | 0.24 | 0.15 | 0.53 | 0.14 | 0.45 | |
| Control Delay | 5.8 | 5.0 | 14.7 | 4.5 | 9.6 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 5.8 | 5.0 | 14.7 | 4.5 | 9.6 | |
| LOS | A | A | B | A | A | |
| Approach Delay | | 5.3 | 12.9 | | 9.6 | |
| Approach LOS | | A | B | | A | |
| Queue Length 50th (ft) | 11 | 13 | 63 | 1 | 12 | |
| Queue Length 95th (ft) | 34 | 40 | 138 | 20 | 45 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 517 | 1668 | 1298 | 1050 | 991 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.24 | 0.09 | 0.26 | 0.07 | 0.22 | |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 38.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 44.9%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A












Lanes, Volumes, Timings

4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings
5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 129 | 296 | 108 | 124 | 133 | 78 |
| Future Volume (vph) | 129 | 296 | 108 | 124 | 133 | 78 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.928 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1652 | 1492 | 1704 | 0 | 1745 | 1818 |
| Fl _t Permitted | 0.950 | | | | 0.361 | |
| Satd. Flow (perm) | 1652 | 1492 | 1704 | 0 | 663 | 1818 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 336 | 90 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.88 | 0.88 | 0.77 | 0.77 | 0.84 | 0.84 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 147 | 336 | 140 | 161 | 158 | 93 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 147 | 336 | 301 | 0 | 158 | 93 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings
5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 27.0 | 27.0 | 29.0 | | 14.0 | 43.0 |
| Total Split (%) | 38.6% | 38.6% | 41.4% | | 20.0% | 61.4% |
| Maximum Green (s) | 22.0 | 22.0 | 24.0 | | 9.0 | 38.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 9.9 | 9.9 | 11.4 | | 20.8 | 20.8 |
| Actuated g/C Ratio | 0.24 | 0.24 | 0.27 | | 0.50 | 0.50 |
| v/c Ratio | 0.38 | 0.55 | 0.57 | | 0.30 | 0.10 |
| Control Delay | 19.0 | 6.5 | 15.0 | | 6.9 | 5.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 19.0 | 6.5 | 15.0 | | 6.9 | 5.5 |
| LOS | B | A | B | | A | A |
| Approach Delay | 10.3 | | 15.0 | | | 6.4 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 31 | 0 | 43 | | 16 | 9 |
| Queue Length 95th (ft) | 80 | 48 | 91 | | 42 | 27 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 962 | 1009 | 1094 | | 603 | 1579 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.15 | 0.33 | 0.28 | | 0.26 | 0.06 |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 41.7 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.57 |
| Intersection Signal Delay: | 10.7 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 40.3% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 160 | 221 | 8 | 12 | 159 | 29 | 35 | 43 | 13 | 29 | 32 | 146 |
| Future Volume (vph) | 160 | 221 | 8 | 12 | 159 | 29 | 35 | 43 | 13 | 29 | 32 | 146 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.995 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.996 | | | 0.978 | | | 0.977 | |
| Satd. Flow (prot) | 1787 | 1874 | 0 | 0 | 1875 | 1568 | 0 | 1777 | 1487 | 0 | 1856 | 1615 |
| Flt Permitted | 0.373 | | | | 0.952 | | | 0.819 | | | 0.806 | |
| Satd. Flow (perm) | 702 | 1874 | 0 | 0 | 1792 | 1568 | 0 | 1488 | 1487 | 0 | 1531 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | | 109 | | | 109 | | | 185 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 | 0.90 | 0.90 | 0.90 | 0.79 | 0.79 | 0.79 |
| Heavy Vehicles (%) | 1% | 0% | 25% | 0% | 1% | 3% | 0% | 2% | 5% | 0% | 0% | 0% |
| Adj. Flow (vph) | 176 | 243 | 9 | 14 | 185 | 34 | 39 | 48 | 14 | 37 | 41 | 185 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 176 | 252 | 0 | 0 | 199 | 34 | 0 | 87 | 14 | 0 | 78 | 185 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 15.0 | 42.0 | | 27.0 | 27.0 | 27.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 21.4% | 60.0% | | 38.6% | 38.6% | 38.6% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 10.0 | 37.0 | | 22.0 | 22.0 | 22.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 21.6 | 21.7 | | | 12.0 | 12.0 | | 9.8 | 9.8 | | 9.8 | 9.8 |
| Actuated g/C Ratio | 0.59 | 0.59 | | | 0.33 | 0.33 | | 0.27 | 0.27 | | 0.27 | 0.27 |
| v/c Ratio | 0.24 | 0.23 | | | 0.34 | 0.06 | | 0.22 | 0.03 | | 0.19 | 0.33 |
| Control Delay | 5.4 | 5.1 | | | 16.0 | 0.2 | | 17.3 | 0.2 | | 16.9 | 5.4 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 5.4 | 5.1 | | | 16.0 | 0.2 | | 17.3 | 0.2 | | 16.9 | 5.4 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 5.2 | | | 13.7 | | | 14.9 | | | 8.8 | |
| Approach LOS | | A | | | B | | | B | | | A | |
| Queue Length 50th (ft) | 16 | 23 | | | 40 | 0 | | 18 | 0 | | 16 | 0 |
| Queue Length 95th (ft) | 42 | 58 | | | 88 | 0 | | 51 | 0 | | 41 | 27 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 881 | 1666 | | | 1092 | 998 | | 934 | 974 | | 962 | 1083 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.15 | | | 0.18 | 0.03 | | 0.09 | 0.01 | | 0.08 | 0.17 |

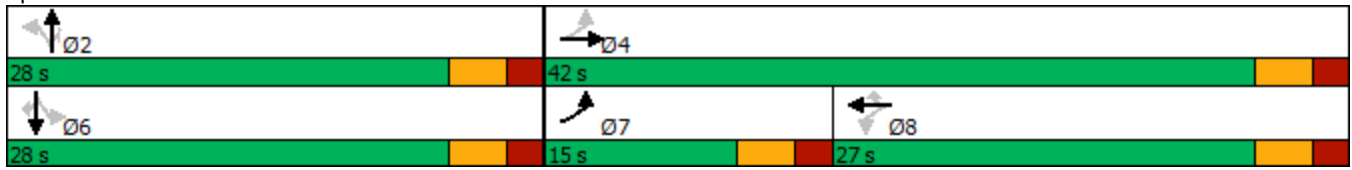
Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 36.8 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.34 |
| Intersection Signal Delay: | 9.0 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 44.5% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

















Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



Lanes, Volumes, Timings
 16: Church Street/New Development & Canal Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (vph) | 2 | 186 | 0 | 0 | 348 | 3 | 11 | 0 | 12 | 5 | 0 | 10 |
| Future Volume (vph) | 2 | 186 | 0 | 0 | 348 | 3 | 11 | 0 | 12 | 5 | 0 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.999 | | | 0.930 | | | 0.907 | |
| Fl _t Protected | | | | | | | | 0.977 | | | 0.985 | |
| Satd. Flow (prot) | 0 | 1900 | 0 | 0 | 1843 | 0 | 0 | 1693 | 0 | 0 | 1664 | 0 |
| Fl _t Permitted | | | | | | | | 0.977 | | | 0.985 | |
| Satd. Flow (perm) | 0 | 1900 | 0 | 0 | 1843 | 0 | 0 | 1693 | 0 | 0 | 1664 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 233 | | | 371 | | | 313 | | | 276 | |
| Travel Time (s) | | 5.3 | | | 8.4 | | | 7.1 | | | 6.3 | |
| Peak Hour Factor | 0.92 | 0.87 | 0.87 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 0% | 0% | 3% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 2 | 214 | 0 | 0 | 391 | 3 | 12 | 0 | 13 | 5 | 0 | 11 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 216 | 0 | 0 | 394 | 0 | 0 | 25 | 0 | 0 | 16 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Intersection Summary | | | | | | | | | | | | |
| Area Type: | Other | | | | | | | | | | | |
| Control Type: | Unsignalized | | | | | | | | | | | |
| Intersection Capacity Utilization | 28.5% | | | | | | ICU Level of Service A | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 164 | 24 | 15 | 1 | 0 | 0 | 34 | 200 | 29 | 27 | 184 | 317 |
| Future Volume (vph) | 164 | 24 | 15 | 1 | 0 | 0 | 34 | 200 | 29 | 27 | 184 | 317 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | 1.00 |
| Frt | | 0.942 | | | | | | 0.985 | | | | 0.919 |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.994 | | | | 0.997 |
| Satd. Flow (prot) | 1805 | 1736 | 0 | 0 | 1805 | 0 | 0 | 1853 | 0 | 0 | 1730 | 0 |
| Flt Permitted | 0.755 | | | | 0.725 | | | 0.894 | | | | 0.973 |
| Satd. Flow (perm) | 1434 | 1736 | 0 | 0 | 1377 | 0 | 0 | 1667 | 0 | 0 | 1689 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 19 | | | | | | 15 | | | | 180 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | | 505 |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | | 11.5 |
| Confl. Peds. (#/hr) | | | | | | | | | | 2 | | |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.25 | 0.25 | 0.25 | 0.84 | 0.84 | 0.84 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 8% | 0% | 0% | 0% | 3% | 0% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 202 | 30 | 19 | 4 | 0 | 0 | 40 | 238 | 35 | 30 | 202 | 348 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 202 | 49 | 0 | 0 | 4 | 0 | 0 | 313 | 0 | 0 | 580 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-----------------------------------|------------------------|-------|-----|-------|-------|-----|------------------------|-------|-----|-------|-------|-----|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Total Split (%) | 35.7% | 35.7% | | 35.7% | 35.7% | | 64.3% | 64.3% | | 64.3% | 64.3% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 12.4 | 12.4 | | | 11.8 | | | 21.1 | | | 21.1 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | | 0.32 | | | 0.57 | | | 0.57 | |
| v/c Ratio | 0.42 | 0.08 | | | 0.01 | | | 0.33 | | | 0.56 | |
| Control Delay | 16.5 | 9.8 | | | 13.0 | | | 8.1 | | | 8.3 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 16.5 | 9.8 | | | 13.0 | | | 8.1 | | | 8.3 | |
| LOS | B | A | | | B | | | A | | | A | |
| Approach Delay | | 15.2 | | | 13.0 | | | 8.1 | | | 8.3 | |
| Approach LOS | | B | | | B | | | A | | | A | |
| Queue Length 50th (ft) | 33 | 4 | | | 1 | | | 37 | | | 53 | |
| Queue Length 95th (ft) | 97 | 24 | | | 2 | | | 94 | | | 171 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 851 | 1038 | | | 817 | | | 1522 | | | 1556 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.24 | 0.05 | | | 0.00 | | | 0.21 | | | 0.37 | |
| Intersection Summary | | | | | | | | | | | | |
| Area Type: | Other | | | | | | | | | | | |
| Cycle Length: | 70 | | | | | | | | | | | |
| Actuated Cycle Length: | 37.1 | | | | | | | | | | | |
| Natural Cycle: | 50 | | | | | | | | | | | |
| Control Type: | Actuated-Uncoordinated | | | | | | | | | | | |
| Maximum v/c Ratio: | 0.56 | | | | | | | | | | | |
| Intersection Signal Delay: | 9.8 | | | | | | Intersection LOS: A | | | | | |
| Intersection Capacity Utilization | 51.1% | | | | | | ICU Level of Service A | | | | | |

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

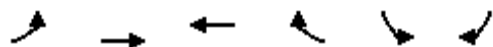
Analysis Period (min) 15

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

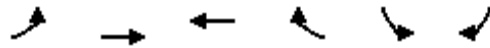
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 112 | 307 | 306 | 69 | 74 | 175 |
| Future Volume (vph) | 112 | 307 | 306 | 69 | 74 | 175 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.905 | |
| Fl _t Protected | 0.950 | | | | 0.985 | |
| Satd. Flow (prot) | 1624 | 1837 | 1739 | 1454 | 1694 | 0 |
| Fl _t Permitted | 0.338 | | | | 0.985 | |
| Satd. Flow (perm) | 578 | 1837 | 1739 | 1454 | 1694 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 69 | 171 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.86 | 0.86 | 0.80 | 0.80 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 130 | 357 | 383 | 86 | 81 | 192 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 130 | 357 | 383 | 86 | 273 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 22.9 | 22.9 | 15.5 | 15.5 | 9.3 | |
| Actuated g/C Ratio | 0.53 | 0.53 | 0.36 | 0.36 | 0.21 | |
| v/c Ratio | 0.30 | 0.37 | 0.61 | 0.15 | 0.55 | |
| Control Delay | 6.8 | 6.9 | 17.1 | 5.1 | 12.2 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 6.8 | 6.9 | 17.1 | 5.1 | 12.2 | |
| LOS | A | A | B | A | B | |
| Approach Delay | | 6.9 | 14.9 | | 12.2 | |
| Approach LOS | | A | B | | B | |
| Queue Length 50th (ft) | 12 | 38 | 77 | 3 | 22 | |
| Queue Length 95th (ft) | 37 | 96 | 145 | 20 | 88 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 440 | 1606 | 1239 | 1055 | 953 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.30 | 0.22 | 0.31 | 0.08 | 0.29 | |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 43.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 11.1
 Intersection Capacity Utilization 49.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A












Lanes, Volumes, Timings

4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings
5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 176 | 305 | 119 | 121 | 298 | 127 |
| Future Volume (vph) | 176 | 305 | 119 | 121 | 298 | 127 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | 0.932 | | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1685 | 1507 | 1712 | 0 | 1745 | 1837 |
| Flt Permitted | 0.950 | | | | 0.327 | |
| Satd. Flow (perm) | 1685 | 1507 | 1712 | 0 | 601 | 1837 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 363 | 76 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.84 | 0.84 | 0.78 | 0.78 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 210 | 363 | 153 | 155 | 324 | 138 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 210 | 363 | 308 | 0 | 324 | 138 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings
5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 24.0 | 24.0 | 27.0 | | 19.0 | 46.0 |
| Total Split (%) | 34.3% | 34.3% | 38.6% | | 27.1% | 65.7% |
| Maximum Green (s) | 19.0 | 19.0 | 22.0 | | 14.0 | 41.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 12.0 | 12.0 | 13.0 | | 29.0 | 29.0 |
| Actuated g/C Ratio | 0.23 | 0.23 | 0.25 | | 0.56 | 0.56 |
| v/c Ratio | 0.54 | 0.58 | 0.63 | | 0.56 | 0.13 |
| Control Delay | 24.4 | 6.8 | 19.9 | | 10.5 | 6.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 24.4 | 6.8 | 19.9 | | 10.5 | 6.1 |
| LOS | C | A | B | | B | A |
| Approach Delay | 13.3 | | 19.9 | | | 9.2 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 54 | 0 | 58 | | 43 | 16 |
| Queue Length 95th (ft) | 123 | 45 | 120 | | 106 | 46 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 654 | 807 | 811 | | 665 | 1493 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.45 | 0.38 | | 0.49 | 0.09 |

Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 51.5 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.63 |
| Intersection Signal Delay: | 13.4 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 52.4% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 128 | 221 | 14 | 22 | 282 | 37 | 42 | 75 | 25 | 45 | 81 | 177 |
| Future Volume (vph) | 128 | 221 | 14 | 22 | 282 | 37 | 42 | 75 | 25 | 45 | 81 | 177 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.991 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Fl _t Protected | 0.950 | | | | 0.996 | | | 0.982 | | | 0.982 | |
| Satd. Flow (prot) | 1787 | 1883 | 0 | 0 | 1892 | 1615 | 0 | 1804 | 1561 | 0 | 1866 | 1615 |
| Fl _t Permitted | 0.374 | | | | 0.964 | | | 0.823 | | | 0.824 | |
| Satd. Flow (perm) | 704 | 1883 | 0 | 0 | 1832 | 1615 | 0 | 1512 | 1561 | 0 | 1566 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 109 | | | 109 | | | 201 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.85 | 0.82 | 0.82 | 0.82 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 139 | 240 | 15 | 26 | 332 | 44 | 51 | 91 | 30 | 51 | 92 | 201 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 139 | 255 | 0 | 0 | 358 | 44 | 0 | 142 | 30 | 0 | 143 | 201 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 11.0 | 42.0 | | 31.0 | 31.0 | 31.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 15.7% | 60.0% | | 44.3% | 44.3% | 44.3% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 6.0 | 37.0 | | 26.0 | 26.0 | 26.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 23.6 | 23.6 | | | 15.9 | 15.9 | | 11.2 | 11.2 | | 11.2 | 11.2 |
| Actuated g/C Ratio | 0.57 | 0.57 | | | 0.38 | 0.38 | | 0.27 | 0.27 | | 0.27 | 0.27 |
| v/c Ratio | 0.23 | 0.24 | | | 0.51 | 0.06 | | 0.35 | 0.06 | | 0.34 | 0.34 |
| Control Delay | 6.2 | 5.9 | | | 15.7 | 0.2 | | 19.6 | 0.2 | | 19.3 | 5.3 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 6.2 | 5.9 | | | 15.7 | 0.2 | | 19.6 | 0.2 | | 19.3 | 5.3 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 6.0 | | | 14.0 | | | 16.2 | | | 11.1 | |
| Approach LOS | | A | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 14 | 27 | | | 75 | 0 | | 31 | 0 | | 31 | 0 |
| Queue Length 95th (ft) | 41 | 70 | | | 149 | 0 | | 77 | 0 | | 83 | 39 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 611 | 1553 | | | 1170 | 1070 | | 889 | 962 | | 920 | 1032 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.16 | | | 0.31 | 0.04 | | 0.16 | 0.03 | | 0.16 | 0.19 |

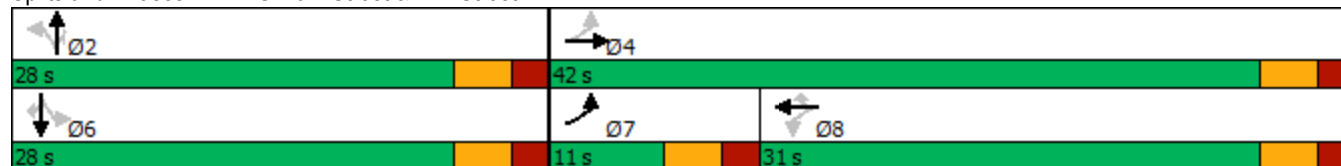
Intersection Summary

| | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 41.4 |
| Natural Cycle: | 60 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.51 |
| Intersection Signal Delay: | 11.1 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 54.5% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



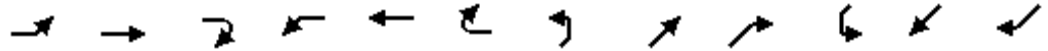
Lanes, Volumes, Timings
 16: Church Street/New Development Driveway & Canal Street

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|--------------|-------|-------|------|-------|-------|------------------------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 373 | 0 | 0 | 357 | 8 | 13 | 0 | 14 | 6 | 0 | 5 |
| Future Volume (vph) | 8 | 373 | 0 | 0 | 357 | 8 | 13 | 0 | 14 | 6 | 0 | 5 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.997 | | | 0.928 | | | 0.944 | |
| Fl _t Protected | | 0.999 | | | | | | 0.977 | | | 0.972 | |
| Satd. Flow (prot) | 0 | 1897 | 0 | 0 | 1875 | 0 | 0 | 1723 | 0 | 0 | 1709 | 0 |
| Fl _t Permitted | | 0.999 | | | | | | 0.977 | | | 0.972 | |
| Satd. Flow (perm) | 0 | 1897 | 0 | 0 | 1875 | 0 | 0 | 1723 | 0 | 0 | 1709 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 233 | | | 371 | | | 313 | | | 294 | |
| Travel Time (s) | | 5.3 | | | 8.4 | | | 7.1 | | | 6.7 | |
| Peak Hour Factor | 0.92 | 0.87 | 0.87 | 0.83 | 0.83 | 0.92 | 0.84 | 0.92 | 0.84 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 0% | 0% | 1% | 2% | 0% | 2% | 0% | 2% | 2% | 2% |
| Adj. Flow (vph) | 9 | 429 | 0 | 0 | 430 | 9 | 15 | 0 | 17 | 7 | 0 | 5 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 438 | 0 | 0 | 439 | 0 | 0 | 32 | 0 | 0 | 12 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Intersection Summary | | | | | | | | | | | | |
| Area Type: | Other | | | | | | | | | | | |
| Control Type: | Unsignalized | | | | | | | | | | | |
| Intersection Capacity Utilization | 36.1% | | | | | | ICU Level of Service A | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 335 | 10 | 48 | 1 | 0 | 1 | 32 | 253 | 6 | 6 | 292 | 333 |
| Future Volume (vph) | 335 | 10 | 48 | 1 | 0 | 1 | 32 | 253 | 6 | 6 | 292 | 333 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.876 | | | 0.932 | | | 0.997 | | | 0.929 | |
| Flt Protected | 0.950 | | | | 0.976 | | | 0.995 | | | | |
| Satd. Flow (prot) | 1805 | 1664 | 0 | 0 | 1728 | 0 | 0 | 1848 | 0 | 0 | 1765 | 0 |
| Flt Permitted | 0.755 | | | | 0.931 | | | 0.904 | | | 0.997 | |
| Satd. Flow (perm) | 1434 | 1664 | 0 | 0 | 1649 | 0 | 0 | 1679 | 0 | 0 | 1760 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 53 | | | 31 | | | 2 | | | 118 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | 505 | |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | 11.5 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 | 0.50 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 368 | 11 | 53 | 2 | 0 | 2 | 35 | 275 | 7 | 7 | 324 | 370 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 368 | 64 | 0 | 0 | 4 | 0 | 0 | 317 | 0 | 0 | 701 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 41.0 | 41.0 | | 41.0 | 41.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 58.6% | 58.6% | | 58.6% | 58.6% | |
| Maximum Green (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.6 | 18.6 | | | 18.6 | | | 25.1 | | | 25.1 | |
| Actuated g/C Ratio | 0.34 | 0.34 | | | 0.34 | | | 0.46 | | | 0.46 | |
| v/c Ratio | 0.75 | 0.11 | | | 0.01 | | | 0.41 | | | 0.80 | |
| Control Delay | 29.6 | 6.9 | | | 0.0 | | | 11.7 | | | 18.7 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 29.6 | 6.9 | | | 0.0 | | | 11.7 | | | 18.7 | |
| LOS | C | A | | | A | | | B | | | B | |
| Approach Delay | | 26.2 | | | | | | 11.7 | | | 18.7 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Queue Length 50th (ft) | 107 | 2 | | | 0 | | | 65 | | | 154 | |
| Queue Length 95th (ft) | #265 | 26 | | | 0 | | | 128 | | | 311 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 683 | 821 | | | 802 | | | 1168 | | | 1259 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.54 | 0.08 | | | 0.00 | | | 0.27 | | | 0.56 | |

Intersection Summary

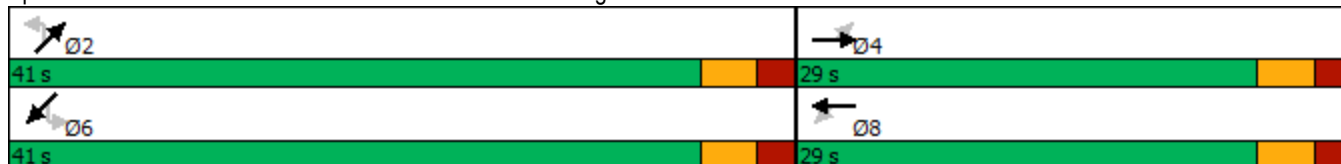
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 54.6
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 19.3
 Intersection Capacity Utilization 70.5%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

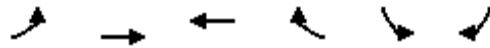
Queue shown is maximum after two cycles.

Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service



Lanes, Volumes, Timings

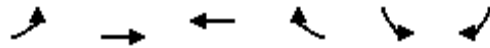
4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 134 | 240 | 315 | 94 | 82 | 154 |
| Future Volume (vph) | 134 | 240 | 315 | 94 | 82 | 154 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 9 | 11 | 10 | 9 | 12 | 12 |
| Storage Length (ft) | 100 | | | 60 | 0 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | 0.850 | 0.912 | |
| Fl _t Protected | 0.950 | | | | 0.983 | |
| Satd. Flow (prot) | 1624 | 1837 | 1756 | 1454 | 1703 | 0 |
| Fl _t Permitted | 0.360 | | | | 0.983 | |
| Satd. Flow (perm) | 616 | 1837 | 1756 | 1454 | 1703 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 91 | 136 | |
| Link Speed (mph) | | 30 | 30 | | 35 | |
| Link Distance (ft) | | 549 | 233 | | 719 | |
| Travel Time (s) | | 12.5 | 5.3 | | 14.0 | |
| Peak Hour Factor | 0.85 | 0.85 | 0.90 | 0.90 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 0% |
| Adj. Flow (vph) | 158 | 282 | 350 | 104 | 96 | 181 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 158 | 282 | 350 | 104 | 277 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 10 | 0 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.14 | 1.04 | 1.09 | 1.14 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Number of Detectors | 1 | 2 | 2 | 1 | 1 | |
| Detector Template | Left | Thru | Thru | Right | Left | |
| Leading Detector (ft) | 20 | 100 | 100 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | 6 | 20 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | 94 | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | |
| Turn Type | pm+pt | NA | NA | Perm | Prot | |

Lanes, Volumes, Timings

4: Canal Street & Howe Avenue



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Detector Phase | 5 | 2 | 6 | 6 | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 23.5 | 23.5 | 23.5 | 23.5 | |
| Total Split (s) | 10.0 | 45.0 | 35.0 | 35.0 | 25.0 | |
| Total Split (%) | 14.3% | 64.3% | 50.0% | 50.0% | 35.7% | |
| Maximum Green (s) | 5.0 | 40.0 | 30.0 | 30.0 | 20.0 | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | Lag | | |
| Lead-Lag Optimize? | Yes | | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | |
| Walk Time (s) | | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | 22.3 | 22.3 | 14.9 | 14.9 | 9.9 | |
| Actuated g/C Ratio | 0.52 | 0.52 | 0.34 | 0.34 | 0.23 | |
| v/c Ratio | 0.35 | 0.30 | 0.58 | 0.19 | 0.56 | |
| Control Delay | 7.9 | 6.8 | 17.0 | 4.9 | 13.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 7.9 | 6.8 | 17.0 | 4.9 | 13.9 | |
| LOS | A | A | B | A | B | |
| Approach Delay | | 7.2 | 14.3 | | 13.9 | |
| Approach LOS | | A | B | | B | |
| Queue Length 50th (ft) | 16 | 31 | 71 | 2 | 30 | |
| Queue Length 95th (ft) | 46 | 77 | 160 | 27 | 91 | |
| Internal Link Dist (ft) | | 469 | 153 | | 639 | |
| Turn Bay Length (ft) | 100 | | | 60 | | |
| Base Capacity (vph) | 446 | 1614 | 1255 | 1065 | 933 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.35 | 0.17 | 0.28 | 0.10 | 0.30 | |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 43.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 11.5
 Intersection Capacity Utilization 50.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Lanes, Volumes, Timings












4: Canal Street & Howe Avenue

Splits and Phases: 4: Canal Street & Howe Avenue



Lanes, Volumes, Timings

5: S Main Street & Canal Street

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (vph) | 159 | 310 | 136 | 147 | 227 | 136 |
| Future Volume (vph) | 159 | 310 | 136 | 147 | 227 | 136 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | 70 | 0 | | 0 | 150 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | 0.850 | 0.930 | | | |
| Fl _t Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1685 | 1507 | 1708 | 0 | 1745 | 1837 |
| Fl _t Permitted | 0.950 | | | | 0.313 | |
| Satd. Flow (perm) | 1685 | 1507 | 1708 | 0 | 575 | 1837 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 365 | 86 | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 549 | | 863 | | | 733 |
| Travel Time (s) | 12.5 | | 19.6 | | | 16.7 |
| Peak Hour Factor | 0.85 | 0.85 | 0.84 | 0.84 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 187 | 365 | 162 | 175 | 244 | 146 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 187 | 365 | 337 | 0 | 244 | 146 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 10 | | 0 | | | 11 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 25 | | 30 | | | 20 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | | 1 | 2 |
| Detector Template | Left | Right | Thru | | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | | pm+pt | NA |

Lanes, Volumes, Timings

5: S Main Street & Canal Street



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Protected Phases | 4 | | 2 | | 1 | 6 |
| Permitted Phases | | 4 | | | 6 | |
| Detector Phase | 4 | 4 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 23.0 | | 10.0 | 23.0 |
| Total Split (s) | 25.0 | 25.0 | 30.0 | | 15.0 | 45.0 |
| Total Split (%) | 35.7% | 35.7% | 42.9% | | 21.4% | 64.3% |
| Maximum Green (s) | 20.0 | 20.0 | 25.0 | | 10.0 | 40.0 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | | 0 |
| Act Effct Green (s) | 11.1 | 11.1 | 13.2 | | 27.2 | 27.2 |
| Actuated g/C Ratio | 0.23 | 0.23 | 0.27 | | 0.56 | 0.56 |
| v/c Ratio | 0.49 | 0.58 | 0.64 | | 0.46 | 0.14 |
| Control Delay | 22.5 | 6.9 | 18.2 | | 9.0 | 6.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 22.5 | 6.9 | 18.2 | | 9.0 | 6.1 |
| LOS | C | A | B | | A | A |
| Approach Delay | 12.1 | | 18.2 | | | 7.9 |
| Approach LOS | B | | B | | | A |
| Queue Length 50th (ft) | 45 | 0 | 59 | | 29 | 16 |
| Queue Length 95th (ft) | 106 | 46 | 132 | | 77 | 47 |
| Internal Link Dist (ft) | 469 | | 783 | | | 653 |
| Turn Bay Length (ft) | 70 | | | | 150 | |
| Base Capacity (vph) | 723 | 855 | 956 | | 571 | 1529 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.43 | 0.35 | | 0.43 | 0.10 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 48.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 12.4
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A





















Lanes, Volumes, Timings

5: S Main Street & Canal Street













Splits and Phases: 5: S Main Street & Canal Street



Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 141 | 197 | 18 | 13 | 226 | 53 | 41 | 89 | 22 | 62 | 69 | 164 |
| Future Volume (vph) | 141 | 197 | 18 | 13 | 226 | 53 | 41 | 89 | 22 | 62 | 69 | 164 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 12 | 12 | 12 |
| Storage Length (ft) | 95 | | 0 | 0 | | 80 | 0 | | 85 | 0 | | 70 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 50 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.987 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.997 | | | 0.984 | | | 0.977 | |
| Satd. Flow (prot) | 1805 | 1875 | 0 | 0 | 1894 | 1615 | 0 | 1796 | 1561 | 0 | 1856 | 1615 |
| Flt Permitted | 0.416 | | | | 0.972 | | | 0.847 | | | 0.770 | |
| Satd. Flow (perm) | 790 | 1875 | 0 | 0 | 1847 | 1615 | 0 | 1546 | 1561 | 0 | 1463 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 10 | | | | 109 | | | 109 | | | 180 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 615 | | | 1053 | | | 519 | | | 863 | |
| Travel Time (s) | | 14.0 | | | 23.9 | | | 11.8 | | | 19.6 | |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.93 | 0.93 | 0.93 | 0.81 | 0.81 | 0.81 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 172 | 240 | 22 | 14 | 243 | 57 | 51 | 110 | 27 | 68 | 76 | 180 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 172 | 262 | 0 | 0 | 257 | 57 | 0 | 161 | 27 | 0 | 144 | 180 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 20 | | | 25 | | | 25 | | | 20 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.04 | 1.04 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |

Lanes, Volumes, Timings
 12: S Main Street & Elm Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Protected Phases | 7 | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 23.0 | | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Total Split (s) | 13.0 | 42.0 | | 29.0 | 29.0 | 29.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 18.6% | 60.0% | | 41.4% | 41.4% | 41.4% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | 8.0 | 37.0 | | 24.0 | 24.0 | 24.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | None | None | None | None | None |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 21.4 | 21.4 | | | 11.9 | 11.9 | | 10.3 | 10.3 | | 10.3 | 10.3 |
| Actuated g/C Ratio | 0.50 | 0.50 | | | 0.28 | 0.28 | | 0.24 | 0.24 | | 0.24 | 0.24 |
| v/c Ratio | 0.29 | 0.28 | | | 0.50 | 0.11 | | 0.43 | 0.06 | | 0.41 | 0.34 |
| Control Delay | 7.0 | 6.5 | | | 18.3 | 1.5 | | 19.9 | 0.2 | | 19.7 | 5.4 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 7.0 | 6.5 | | | 18.3 | 1.5 | | 19.9 | 0.2 | | 19.7 | 5.4 |
| LOS | A | A | | | B | A | | B | A | | B | A |
| Approach Delay | | 6.7 | | | 15.2 | | | 17.1 | | | 11.8 | |
| Approach LOS | | A | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 18 | 28 | | | 56 | 0 | | 35 | 0 | | 31 | 0 |
| Queue Length 95th (ft) | 45 | 65 | | | 123 | 7 | | 78 | 0 | | 81 | 37 |
| Internal Link Dist (ft) | | 535 | | | 973 | | | 439 | | | 783 | |
| Turn Bay Length (ft) | 95 | | | | | 80 | | | 85 | | | 70 |
| Base Capacity (vph) | 608 | 1567 | | | 1130 | 1030 | | 909 | 963 | | 860 | 1024 |
| Starvation Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.17 | | | 0.23 | 0.06 | | 0.18 | 0.03 | | 0.17 | 0.18 |

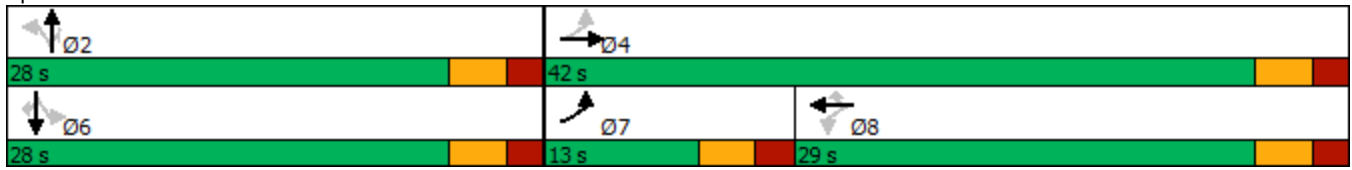
Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 42.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 11.7
 Intersection Capacity Utilization 50.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

















Lanes, Volumes, Timings

12: S Main Street & Elm Street

Splits and Phases: 12: S Main Street & Elm Street



Lanes, Volumes, Timings
 16: Church Street/New Development & Canal Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (vph) | 7 | 315 | 0 | 0 | 387 | 9 | 13 | 0 | 12 | 7 | 0 | 9 |
| Future Volume (vph) | 7 | 315 | 0 | 0 | 387 | 9 | 13 | 0 | 12 | 7 | 0 | 9 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr _t | | | | | 0.997 | | | 0.935 | | | 0.925 | |
| Fl _t Protected | | 0.999 | | | | | | 0.975 | | | 0.978 | |
| Satd. Flow (prot) | 0 | 1897 | 0 | 0 | 1893 | 0 | 0 | 1698 | 0 | 0 | 1685 | 0 |
| Fl _t Permitted | | 0.999 | | | | | | 0.975 | | | 0.978 | |
| Satd. Flow (perm) | 0 | 1897 | 0 | 0 | 1893 | 0 | 0 | 1698 | 0 | 0 | 1685 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 233 | | | 371 | | | 313 | | | 228 | |
| Travel Time (s) | | 5.3 | | | 8.4 | | | 7.1 | | | 5.2 | |
| Peak Hour Factor | 0.92 | 0.89 | 0.89 | 0.90 | 0.90 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 0% | 0% | 0% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 8 | 354 | 0 | 0 | 430 | 10 | 14 | 0 | 13 | 8 | 0 | 10 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 362 | 0 | 0 | 440 | 0 | 0 | 27 | 0 | 0 | 18 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Intersection Summary | | | | | | | | | | | | |
| Area Type: | Other | | | | | | | | | | | |
| Control Type: | Unsignalized | | | | | | | | | | | |
| Intersection Capacity Utilization | 32.2% | | | | | | ICU Level of Service A | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 276 | 25 | 33 | 2 | 0 | 0 | 44 | 210 | 27 | 17 | 257 | 352 |
| Future Volume (vph) | 276 | 25 | 33 | 2 | 0 | 0 | 44 | 210 | 27 | 17 | 257 | 352 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 130 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.914 | | | | | | 0.987 | | | 0.924 | |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.992 | | | 0.999 | |
| Satd. Flow (prot) | 1805 | 1737 | 0 | 0 | 1805 | 0 | 0 | 1860 | 0 | 0 | 1754 | 0 |
| Flt Permitted | 0.752 | | | | 0.716 | | | 0.870 | | | 0.987 | |
| Satd. Flow (perm) | 1429 | 1737 | 0 | 0 | 1360 | 0 | 0 | 1632 | 0 | 0 | 1733 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 36 | | | | | | 11 | | | 136 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 371 | | | 287 | | | 1053 | | | 505 | |
| Travel Time (s) | | 8.4 | | | 6.5 | | | 23.9 | | | 11.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.25 | 0.25 | 0.25 | 0.88 | 0.88 | 0.88 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 300 | 27 | 36 | 8 | 0 | 0 | 50 | 239 | 31 | 18 | 271 | 371 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 300 | 63 | 0 | 0 | 8 | 0 | 0 | 320 | 0 | 0 | 660 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
 17: Elm Street & Canal Street & McLaughlin's Service



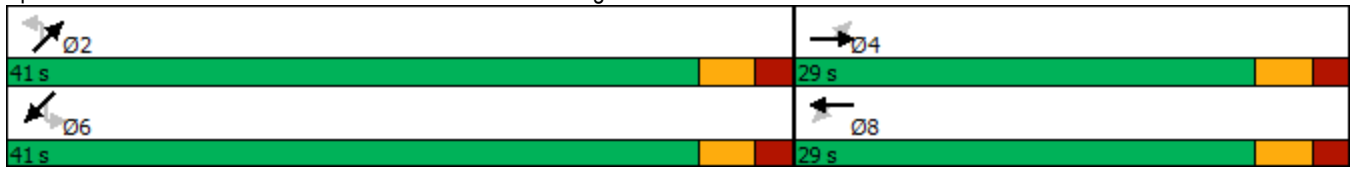
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Permitted Phases | 4 | 4 | | 8 | 8 | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 41.0 | 41.0 | | 41.0 | 41.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 58.6% | 58.6% | | 58.6% | 58.6% | |
| Maximum Green (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 15.7 | 15.7 | | | 15.7 | | | 22.3 | | | 22.3 | |
| Actuated g/C Ratio | 0.32 | 0.32 | | | 0.32 | | | 0.46 | | | 0.46 | |
| v/c Ratio | 0.66 | 0.11 | | | 0.02 | | | 0.43 | | | 0.77 | |
| Control Delay | 23.9 | 8.9 | | | 14.0 | | | 11.0 | | | 15.8 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 23.9 | 8.9 | | | 14.0 | | | 11.0 | | | 15.8 | |
| LOS | C | A | | | B | | | B | | | B | |
| Approach Delay | | 21.3 | | | 14.0 | | | 11.0 | | | 15.8 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 70 | 5 | | | 2 | | | 52 | | | 105 | |
| Queue Length 95th (ft) | 185 | 31 | | | 3 | | | 124 | | | 273 | |
| Internal Link Dist (ft) | | 291 | | | 207 | | | 973 | | | 425 | |
| Turn Bay Length (ft) | 130 | | | | | | | | | | | |
| Base Capacity (vph) | 772 | 955 | | | 735 | | | 1245 | | | 1352 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.39 | 0.07 | | | 0.01 | | | 0.26 | | | 0.49 | |

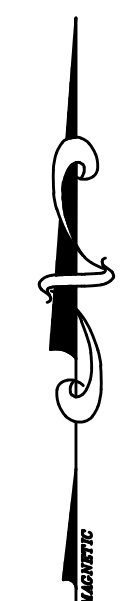
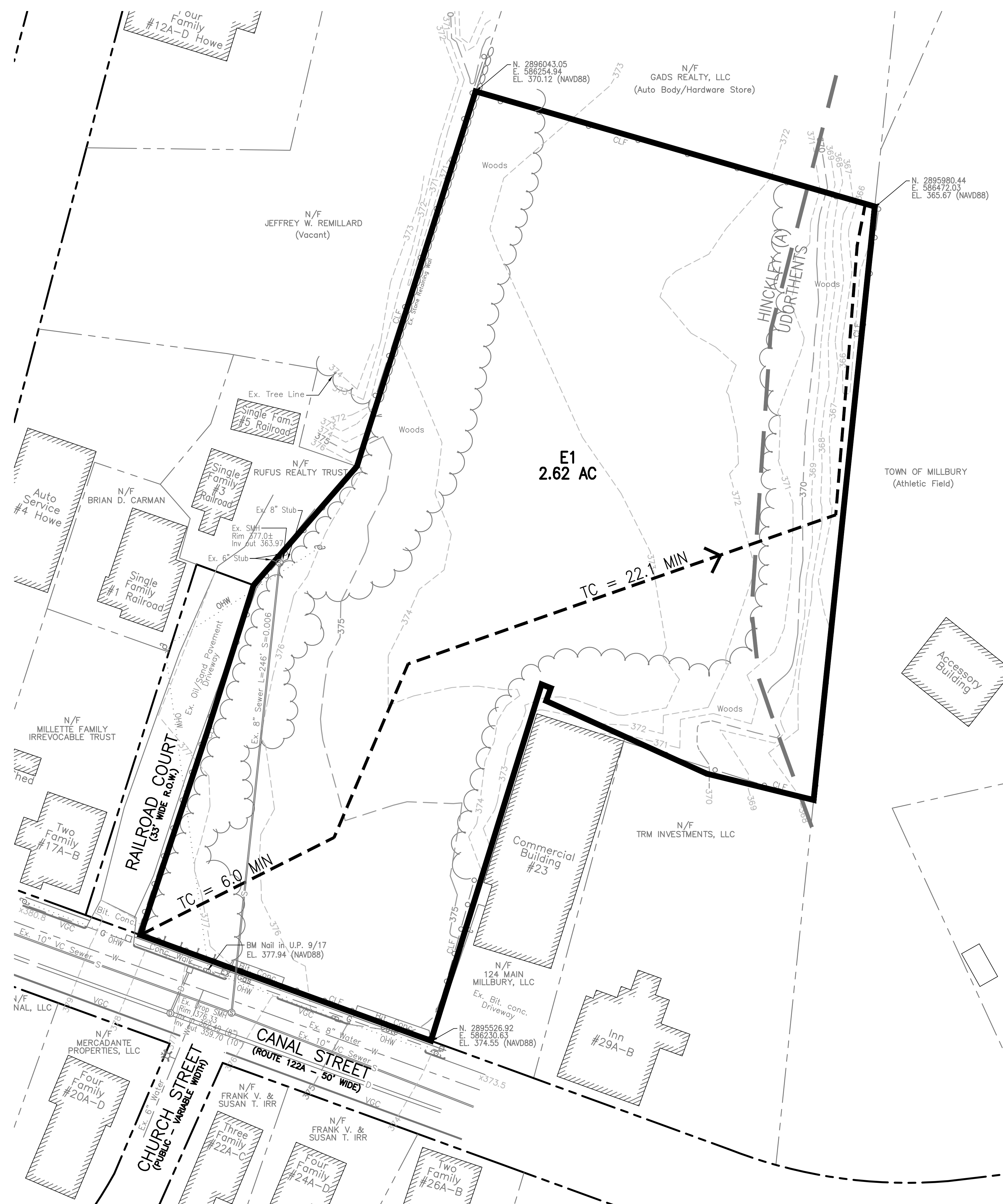
| Intersection Summary | |
|------------------------------------|------------------------|
| Area Type: | Other |
| Cycle Length: | 70 |
| Actuated Cycle Length: | 49 |
| Natural Cycle: | 55 |
| Control Type: | Actuated-Uncoordinated |
| Maximum v/c Ratio: | 0.77 |
| Intersection Signal Delay: | 16.1 |
| Intersection LOS: | B |
| Intersection Capacity Utilization: | 60.4% |
| ICU Level of Service: | B |
| Analysis Period (min): | 15 |

Lanes, Volumes, Timings

17: Elm Street & Canal Street & McLaughlin's Service

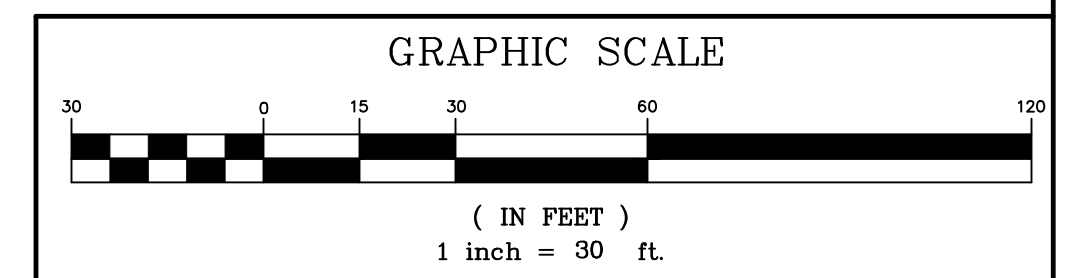
Splits and Phases: 17: Elm Street & Canal Street & McLaughlin's Service





LEGEND

| | |
|--|---------------------------------|
| | SUBCATCHMENT AREA |
| | SOIL TYPE BOUNDARY |
| | TIME OF CONCENTRATION FLOW PATH |



| REV. NO. | DATE | REVISION |
|----------|------|----------|
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TITLE:
SITE DEVELOPMENT PLAN
FOR
19 CANAL STREET
MILLBURY, MASSACHUSETTS 01527

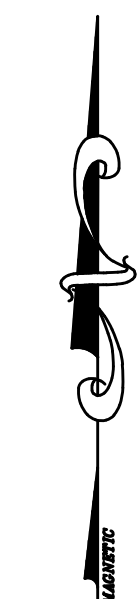
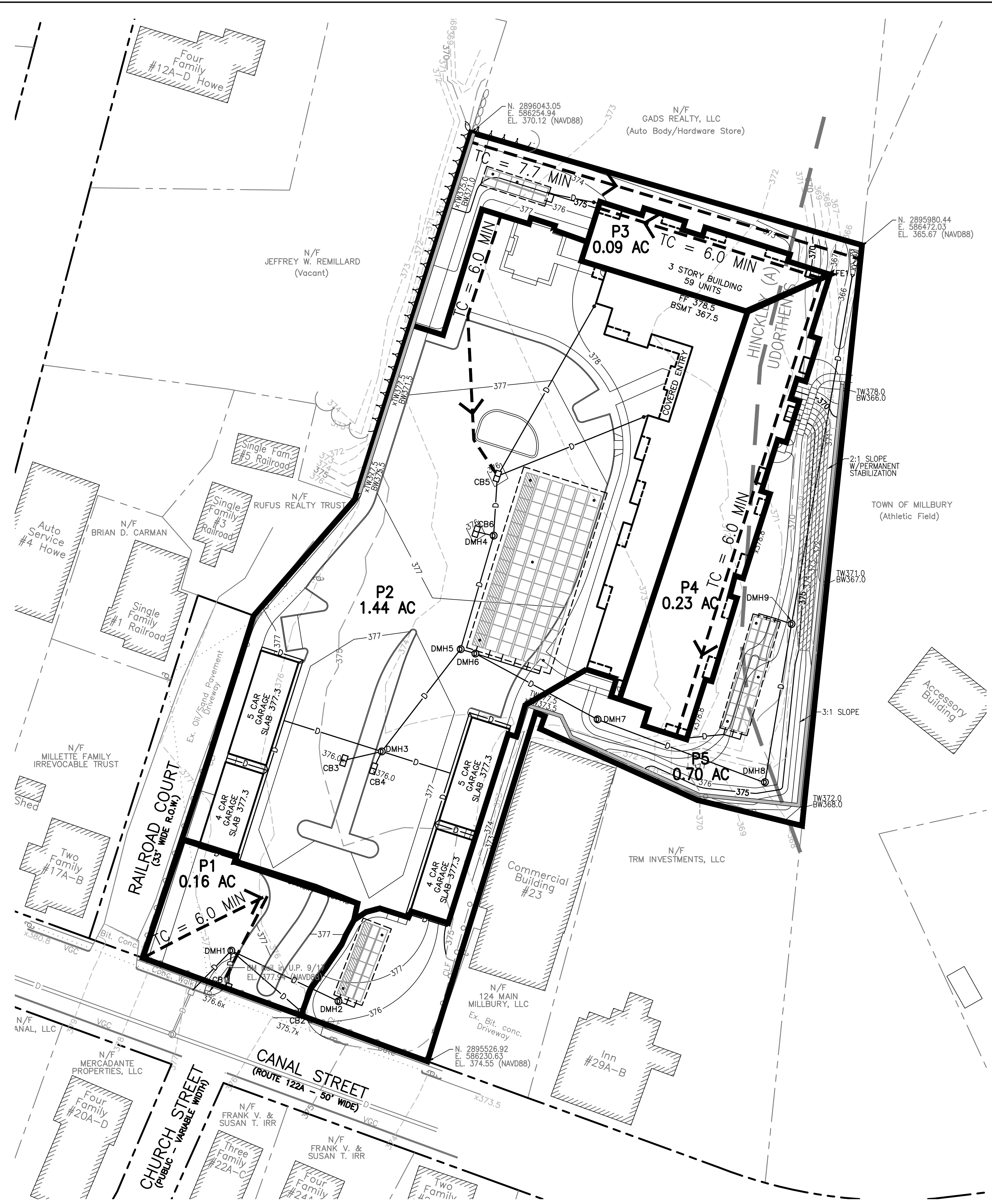
PREPARED FOR:
ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MASSACHUSETTS 01581

PREPARED BY:
J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MASSACHUSETTS 01752

TELE NO.: (508) 845-2500
SCALE: 1" = 30'
DATE: APRIL 9, 2021

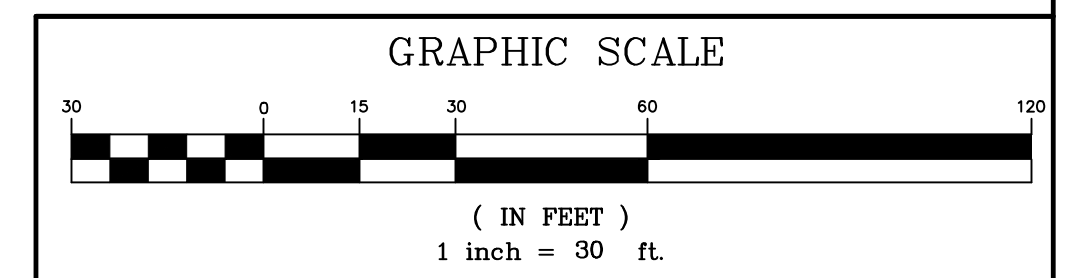
PRE-DEVELOPMENT DRAINAGE AREAS

SHEET NO.: SHEET 1 OF 2
PROJECT NO.: G-611



LEGEND

- SUBCATCHMENT AREA
- SOIL TYPE BOUNDARY
- TIME OF CONCENTRATION FLOW PATH



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| REV. NO. | DATE | REVISION |
|----------|------|----------|
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| | | |

TITLE:
SITE DEVELOPMENT PLAN
FOR
19 CANAL STREET
MILLBURY, MASSACHUSETTS 01527

PREPARED FOR:
ELITE HOME BUILDERS, LLC
 P.O. BOX 1205
 WESTBOROUGH, MASSACHUSETTS 01581

PREPARED BY:
J.M. GRENIER ASSOCIATES INC.
 325 DONALD LYNCH BOULEVARD SUITE 100
 MARLBOROUGH, MASSACHUSETTS 01752
 TELE NO.: (508) 845-2500

| | |
|---------------------------|-------------------------------|
| SCALE: 1" = 30' | DATE: APRIL 9, 2021 |
|---------------------------|-------------------------------|

POST-DEVELOPMENT DRAINAGE AREAS

| | |
|-----------------------------------|------------------------------|
| SHEET NO.: SHEET 2 OF 2 | PROJECT NO.: G-611 |
|-----------------------------------|------------------------------|

35 Main Street
Milford, MA 01757
(P) 781.407.0000
(P) 508.384.8838
Contact@HPADesign.com

DWD ENGINEERING, INC.
5 MICHAEL ROAD, E. BRIDGEWATER
Tel. (508) 378-9602
Fax. (508) 378-2922

PROPOSED DESIGNS FOR:
Elite Home Bldrs LLC
Canal Street Apts
Millbury MA

B 4-12-21 ISS FOR PLANNING APPROVAL
A 1-8-21 BANK APPRAISAL ONLY

REVISIONS:
PROJECT #: 20200161

Aug 21, 2020

DRAWN BY: PFF

CHECKED BY: HPA

SCALE: SEE DRAWING

SHEET TITLE:

ELEVATION & SECTIONS

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A2.1



E PART ELEVATION & SECTION
3/32 = 1'-0"



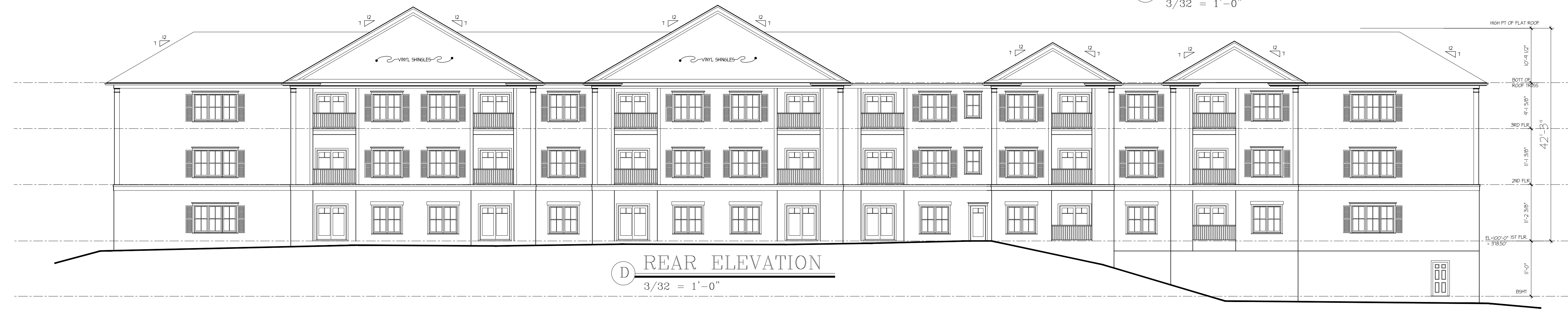
B FRONT ELEVATION
3/32 = 1'-0"



C LEFT SIDE ELEVATION
3/32 = 1'-0"



A RIGHT SIDE/END ELEVATION
3/32 = 1'-0"



D REAR ELEVATION
3/32 = 1'-0"

SITE DEVELOPMENT PLAN

FOR

19 CANAL STREET

MILLBURY, MASSACHUSETTS 01527

RECORD APPLICANT:

ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MA 01581
(508) 560-9440

RECORD OWNER:

ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MA 01581
(508) 560-9440

LAND PLANNERS—CIVIL ENGINEERS:

J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MA 01752
(508) 845-2500

LANDSCAPE ARCHITECT

LAND DESIGN COLLABORATIVE
45 LYMAN STREET SUITE 1
WESTBOROUGH, MA 01581
(508) 952-6300

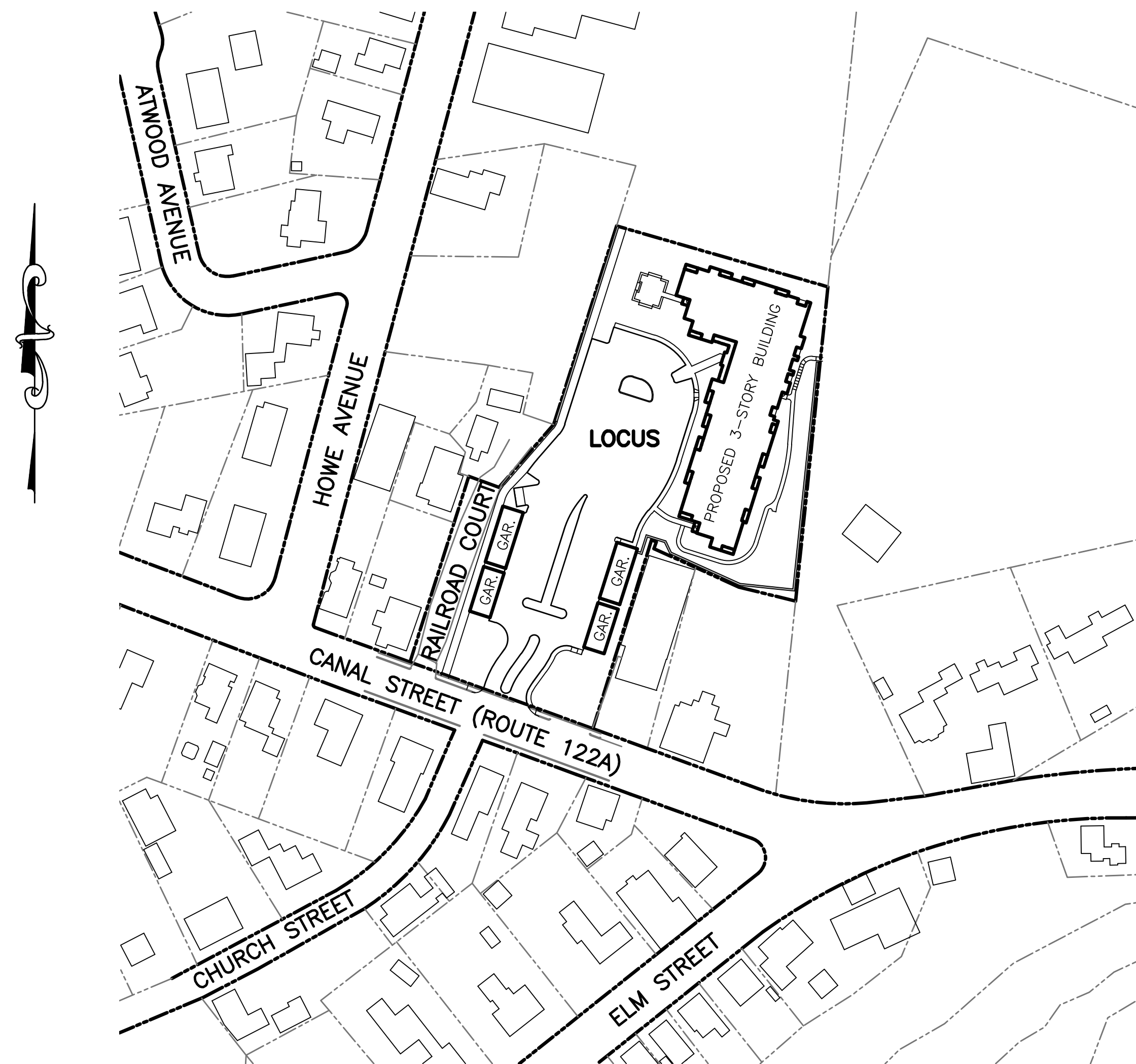
ARCHITECT

HPA DESIGN INC.
35 MAIN STREET
MILFORD, MA 01757
(781) 407-0000

LAND SURVEYOR:

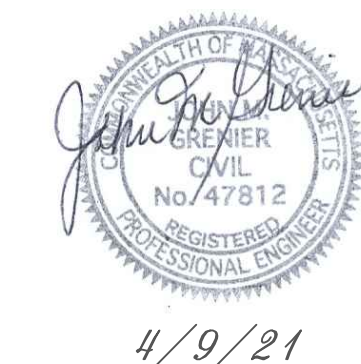
REALMAPINFO, LLC
11 APEX DRIVE SUITE 300 S
MARLBOROUGH, MA 01752

ZONING DISTRICT: BUSINESS I (B-1)



LOCUS:
SCALE: 1"=100'

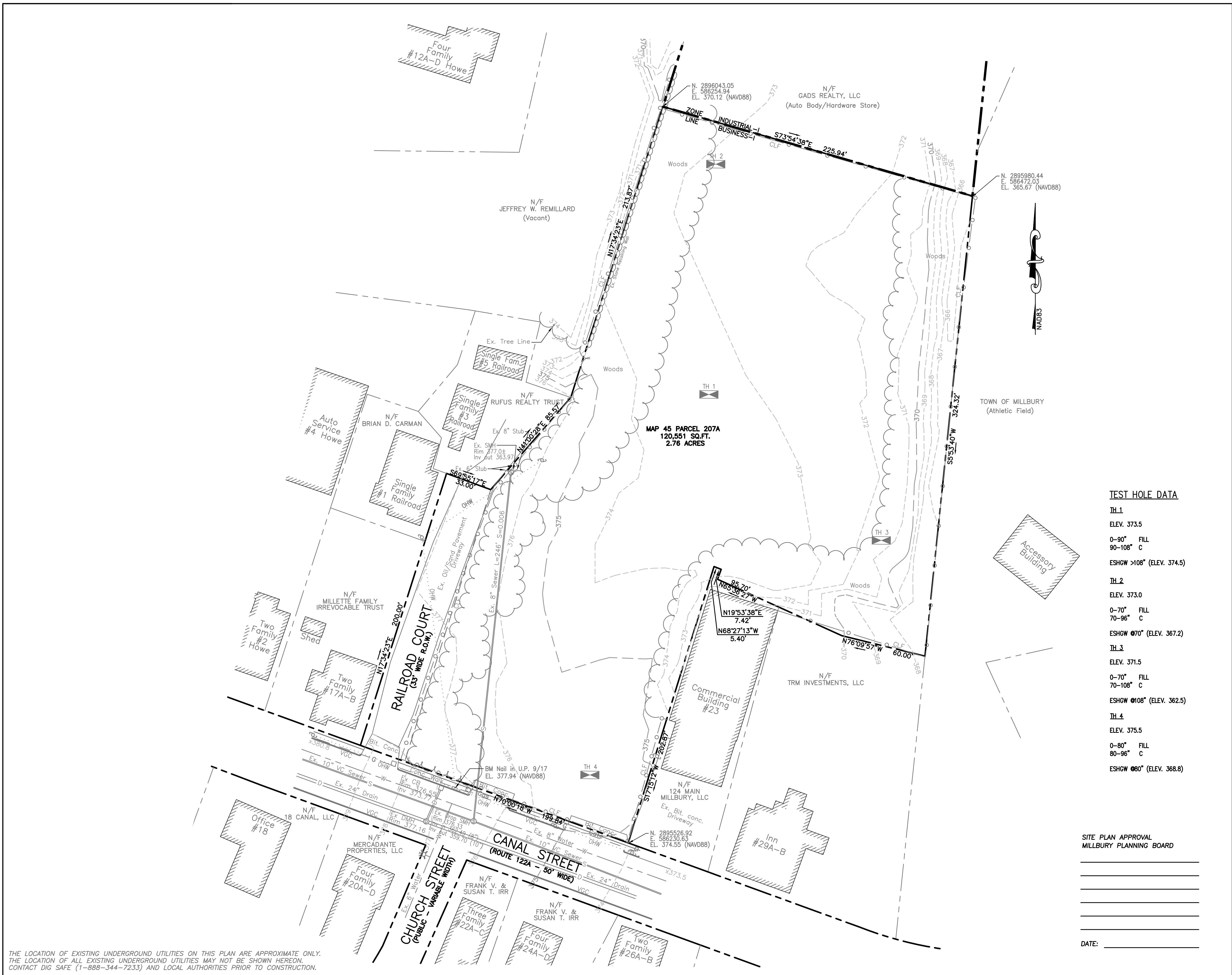
| INDEX DESCRIPTION | SHEET NUMBER |
|--------------------------------------|--------------|
| COVER | 1 OF 9 |
| EXISTING CONDITIONS PLAN | 2 OF 9 |
| LAYOUT PLAN | 3 OF 9 |
| GRADING AND DRAINAGE PLAN | 4 OF 9 |
| UTILITY PLAN | 5 OF 9 |
| LANDSCAPE PLAN | 6 OF 9 |
| EROSION & SEDIMENTATION CONTROL PLAN | 7 OF 9 |
| DETAIL PLAN | 8 OF 9 |
| DETAIL PLAN | 9 OF 9 |



SITE PLAN APPROVAL
MILLBURY PLANNING BOARD

DATE: _____

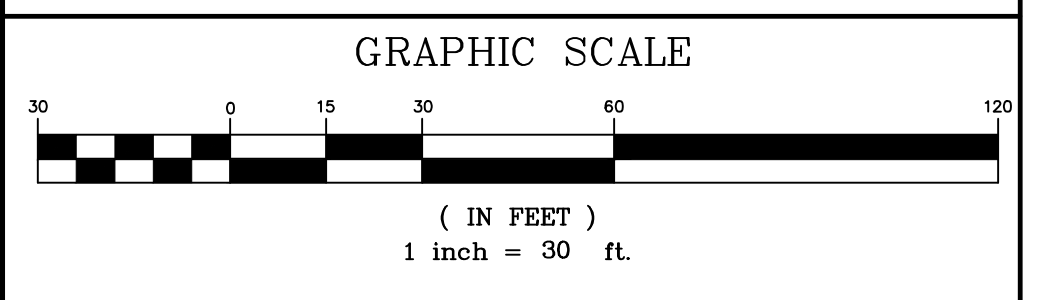
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| | | |
| REV. NO. | DATE | REVISION |
| SCALE: | DATE: | |
| AS SHOWN | APRIL 9, 2021 | |
| COVER SHEET | | |
| SHEET NO.: | PROJECT NO.: | |
| SHEET 1 OF 9 | G-611 | |



LEGEND:

| | |
|-----|-------------------------|
| --- | EXISTING PROPERTY LINE |
| --- | EXISTING EASEMENT LINE |
| --- | EXISTING CONTOUR - HIGH |
| --- | EXISTING CONTOUR - LOW |
| --- | EXISTING EDGE PAVEMENT |
| --- | EXISTING CURB |
| --- | EXISTING TREE LINE |
| --- | EXISTING STONE WALL |
| --- | EXISTING DRAIN LINE |
| --- | EXISTING SEWER LINE |
| --- | EXISTING WATER LINE |
| --- | EXISTING GAS LINE |
| --- | EXISTING OVERHEAD WIRES |
| --- | ZONE LINE |

- NOTES:**
1. REFERENCE TOWN OF MILLBURY ASSESSORS MAP 45 PARCEL 207A.
 2. EXISTING CONDITIONS SURVEY PERFORMED BY REALMAPINFO, LLC 11 APEX DRIVE SUITE 300 S MARLBOROUGH, MA 01752.
 3. SITE IS NOT LOCATED IN A FLOOD ZONE AS SHOWN ON FIRM MAP PANEL 250318C0809E FOR THE TOWN OF MILLBURY MASSACHUSETTS, WORCESTER COUNTY, DATED JULY 4, 2011.
 4. DATUM IS NAVD 88 AND NAD 83.
 5. EXISTING UTILITIES ARE FROM RECORD SOURCES AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.



TEST HOLE DATA

| |
|---------------------------|
| TH 1 |
| ELEV. 373.5 |
| 0-90" FILL |
| 90-108" C |
| ESHGW >108" (ELEV. 374.5) |
| TH 2 |
| ELEV. 373.0 |
| 0-70" FILL |
| 70-96" C |
| ESHGW @70" (ELEV. 367.2) |
| TH 3 |
| ELEV. 371.5 |
| 0-70" FILL |
| 70-108" C |
| ESHGW @108" (ELEV. 362.5) |
| TH 4 |
| ELEV. 375.5 |
| 0-80" FILL |
| 80-96" C |
| ESHGW @80" (ELEV. 368.8) |

SITE PLAN APPROVAL
MILLBURY PLANNING BOARD

DATE: _____

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ON THIS PLAN ARE APPROXIMATE ONLY. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES MAY NOT BE SHOWN HEREON. CONTACT DIG SAFE (1-888-344-7233) AND LOCAL AUTHORITIES PRIOR TO CONSTRUCTION.

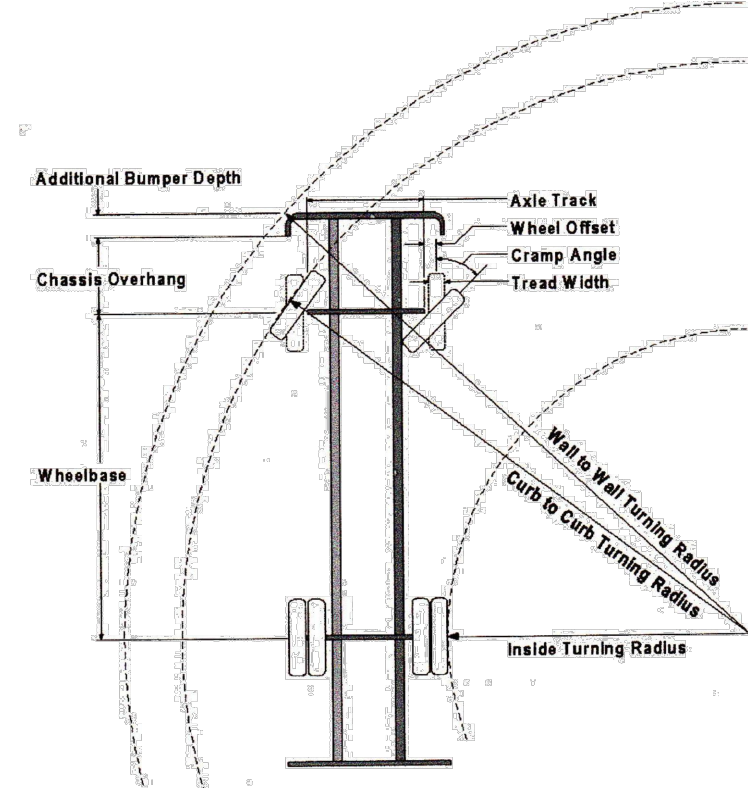
| | | |
|---|---------------------|----------|
| REV. NO. | DATE | REVISION |
| | | |
| TITLE: | | |
| SITE DEVELOPMENT PLAN FOR 19 CANAL STREET MILLBURY, MASSACHUSETTS 01527 | | |
| PREPARED FOR: | | |
| ELITE HOME BUILDERS, LLC P.O. BOX 1205 WESTBOROUGH, MASSACHUSETTS 01581 | | |
| PREPARED BY: | | |
| J.M. GRENIER ASSOCIATES INC. 325 DONALD LYNCH BOULEVARD SUITE 100 MARLBOROUGH, MASSACHUSETTS 01752 | | |
| TELE NO.: (508) 845-2500 | | |
| SCALE: | DATE: | |
| 1" = 30' | APRIL 9, 2021 | |
| EXISTING CONDITIONS | | |
| SHEET NO.: | PROJECT NO.: | |
| SHEET 2 OF 9 | G-611 | |



Turning Performance Analysis

07/31/2012

Bid Number: 206
Department: MILLBURY FIRE DEPARTMENT, MA
Chassis: Arrow-XT Chassis, PAP/SkyArm/Midmount MUX, 2010
Body: Aerial, Platform, 95', Mid-Mount, No Pump, S/S



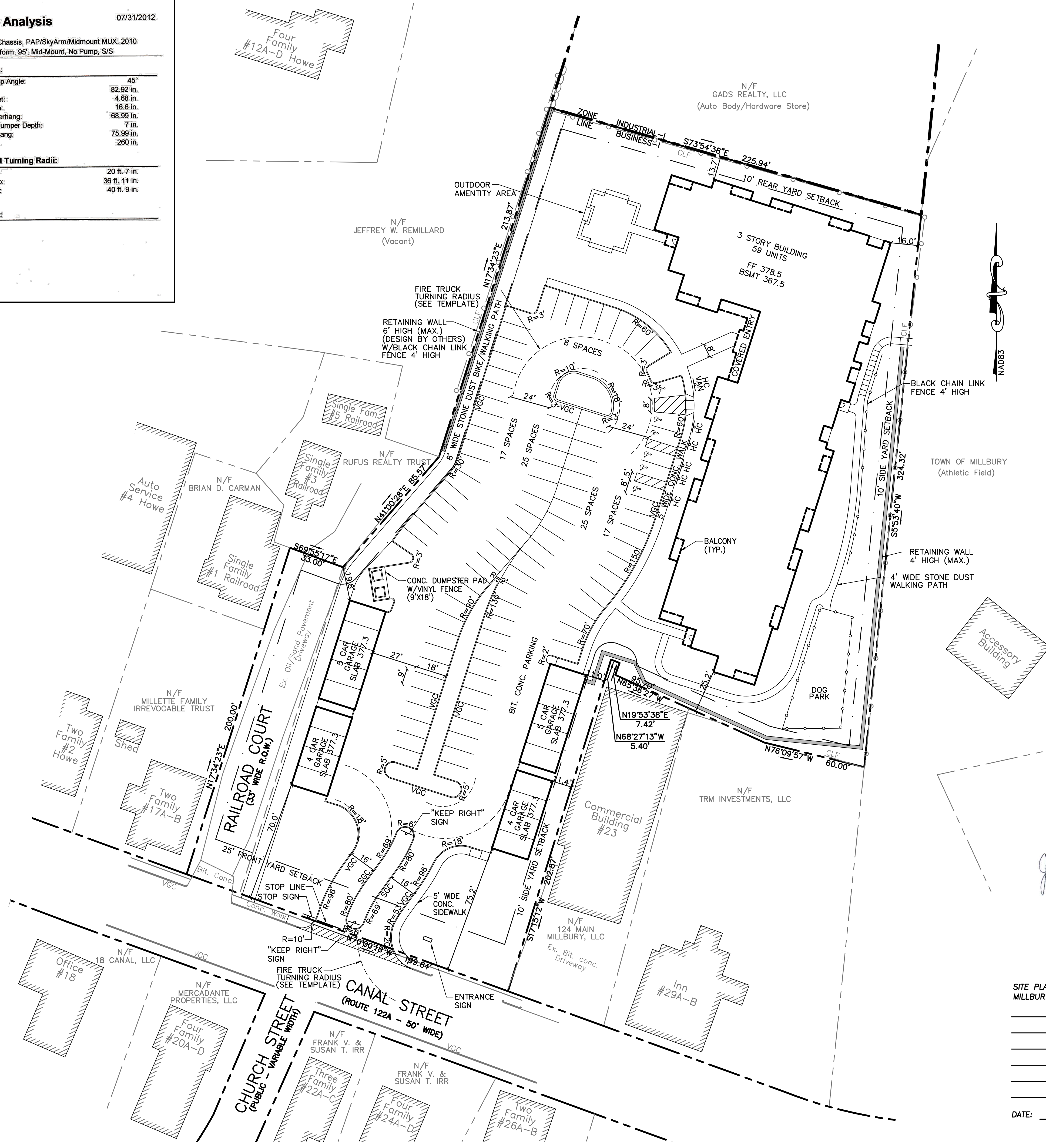
Parameters:

| | |
|--------------------------|-----------|
| Inside Cramp Angle: | 45° |
| Axle Track: | 82.92 in. |
| Wheel Offset: | 4.88 in. |
| Tread Width: | 16.6 in. |
| Chassis Overhang: | 68.99 in. |
| Additional Bumper Depth: | 7 in. |
| Front Overhang: | 75.99 in. |
| Wheelbase: | 260 in. |

Calculated Turning Radii:

| | |
|---------------|---------------|
| Inside Turn: | 20 ft. 7 in. |
| Curb to curb: | 36 ft. 11 in. |
| Wall to wall: | 40 ft. 9 in. |

Comments:



LEGEND:

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT LINE
- - -370- - - EXISTING CONTOUR - HIGH
- - -370- - - EXISTING CONTOUR - LOW
- - -368- - - PROPOSED CONTOUR - HIGH
- - -368- - - PROPOSED CONTOUR - LOW
- EXISTING EDGE PAVEMENT
- EXISTING CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED GRANITE CURB
- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING STONE WALL
- EXISTING DRAIN LINE
- PROPOSED DRAIN LINE
- EXISTING SEWER LINE
- PROPOSED SEWER LINE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING OVERHEAD WIRES
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED EROSION CONTROL
- ZONE LINE

ZONING SUMMARY:

CURRENT ZONE: BUSINESS I (B-I)

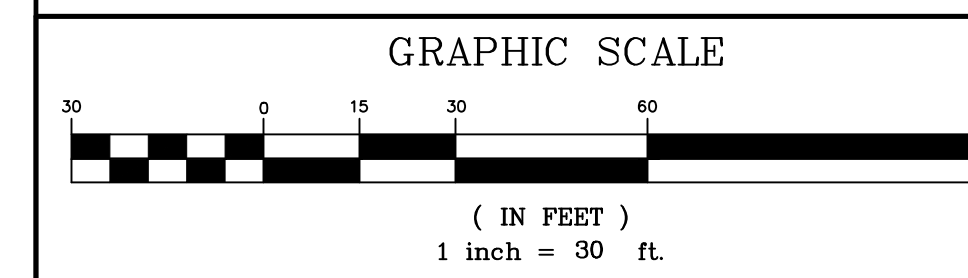
| | REQUIRED | PROVIDED |
|-------------------------|-----------------|----------------|
| MIN. LOT AREA | 120,500 SQ.FT.* | 120,551 SQ.FT. |
| MIN. FRONTAGE | 100' | 199.84' |
| MIN. FRONT YARD SETBACK | 25' | 70.0' |
| MIN. SIDE YARD SETBACK | 10' | 11.4' |
| MIN. REAR YARD SETBACK | 10' | 13.7' |
| MAX. LOT COVERAGE | 30% | 22.4% |
| MIN. OPEN SPACE | 20% | 39.6% |

*12,500 SQ.FT. FIRST UNIT + 1,250 SQ.FT./ADDITIONAL DU + 500 SQ.FT./BEDROOM OVER 2
12,500 SQ.FT. + 1,250 SQ.FT.*58 + 500 SQ.FT.*71 = 120,500 SQ.FT.

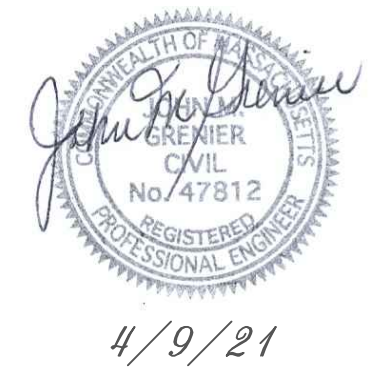
PARKING SPACE REQUIREMENTS

| USE | REQUIRED |
|--|----------------------|
| MULTI-FAMILY (3/2 BEDROOM UNIT) x 14 UNITS = | 42 SPACES |
| MULTI-FAMILY (2/1 BEDROOM UNIT) x 45 UNITS = | 90 SPACES |
| | 132 SPACES |
| | 110 SPACES PROPOSED* |

* WAIVER REQUESTED FOR REDUCTION IN REQUIRED PARKING SPACES



| REV. NO. | DATE | REVISION |
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SITE PLAN APPROVAL
MILLBURY PLANNING BOARD

DATE: _____

TITLE:
SITE DEVELOPMENT PLAN
FOR
19 CANAL STREET
MILLBURY, MASSACHUSETTS 01527

PREPARED FOR:
ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MASSACHUSETTS 01581

PREPARED BY:
J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MASSACHUSETTS 01752

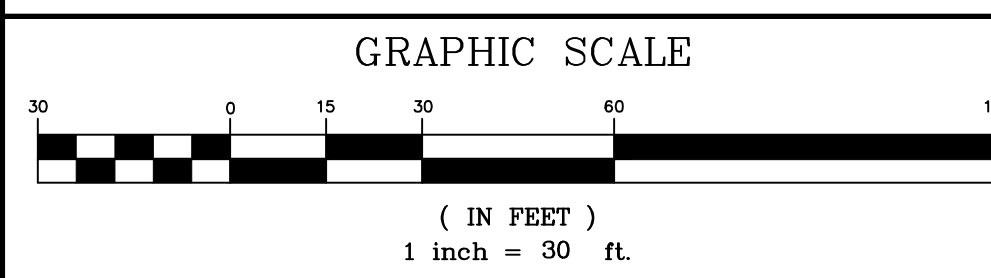
TELE NO.: (508) 845-2500
SCALE: 1" = 30'
DATE: APRIL 9, 2021

LAYOUT PLAN

SHEET NO.: SHEET 3 OF 9
PROJECT NO.: G-611



- LEGEND:**
- — — — — EXISTING PROPERTY LINE
 - - - - - EXISTING EASEMENT LINE
 - - - - - 370 EXISTING CONTOUR - HIGH
 - - - - - 368 EXISTING CONTOUR - LOW
 - - - - - 370 PROPOSED CONTOUR - HIGH
 - - - - - 368 PROPOSED CONTOUR - LOW
 - — — — — EXISTING EDGE PAVEMENT
 - — — — — EXISTING CURB
 - — — — — PROPOSED EDGE OF PAVEMENT
 - — — — — PROPOSED GRANITE CURB
 - — — — — EXISTING TREE LINE
 - — — — — PROPOSED TREE LINE
 - — — — — EXISTING STONE WALL
 - — — — — EXISTING DRAIN LINE
 - — — — — PROPOSED DRAIN LINE
 - — — — — EXISTING SEWER LINE
 - — — — — PROPOSED SEWER LINE
 - — — — — EXISTING WATER LINE
 - — — — — PROPOSED WATER LINE
 - — — — — EXISTING GAS LINE
 - — — — — PROPOSED GAS LINE
 - — — — — EXISTING OVERHEAD WIRES
 - — — — — PROPOSED UNDERGROUND ELECTRIC
 - — — — — PROPOSED EROSION CONTROL
 - — — — — ZONE LINE



| REV. NO. | DATE | REVISION |
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TITLE:

**SITE DEVELOPMENT PLAN
FOR
19 CANAL STREET
MILLBURY, MASSACHUSETTS 01527**

PREPARED FOR:

**ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MASSACHUSETTS 01581**

PREPARED BY:

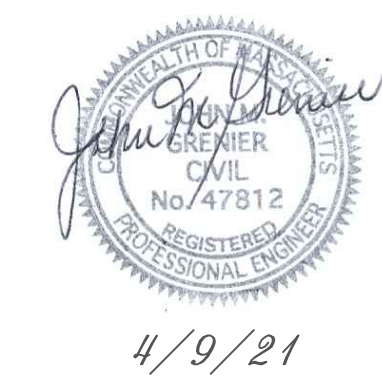
**J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MASSACHUSETTS 01752**

TELE NO.: (508) 845-2500

SCALE: 1" = 30' **DATE:** APRIL 9, 2021

GRADING AND DRAINAGE PLAN

SHEET NO.: SHEET 4 OF 9 **PROJECT NO.:** G-611



SITE PLAN APPROVAL
MILLBURY PLANNING BOARD

DATE: _____



LAND DESIGN COLLABORATIVE
Chauncy Place | Terrace North | Suite 1
45 Lyman Street
Westborough, MA 01581

508.952.6300 | LDcollaborative.com

THE CONTENT, INFORMATION AND DESIGN OF THIS PLAN ARE PROPRIETARY AND DUBLICATION AND/OR UTILIZATION FOR ANY PURPOSES IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM LAND DESIGN COLLABORATIVE. ONLY APPROVED, SIGNED AND SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.
© LAND DESIGN COLLABORATIVE, LLC.

Prepared For:

Elite Home Builders
PO Box 1205
Westborough, MA 01581

Project Applicant:

Elite Home Builders
PO Box 1205
Westborough, MA 01581

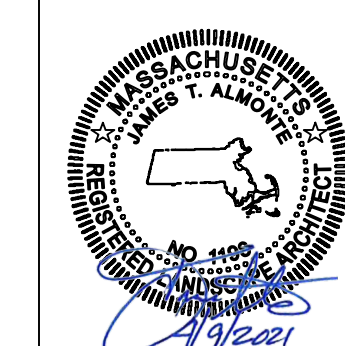
Project Title:

Canal Street
Millbury, MA
(Worcester County)

Sheet Title:

LANDSCAPE PLAN

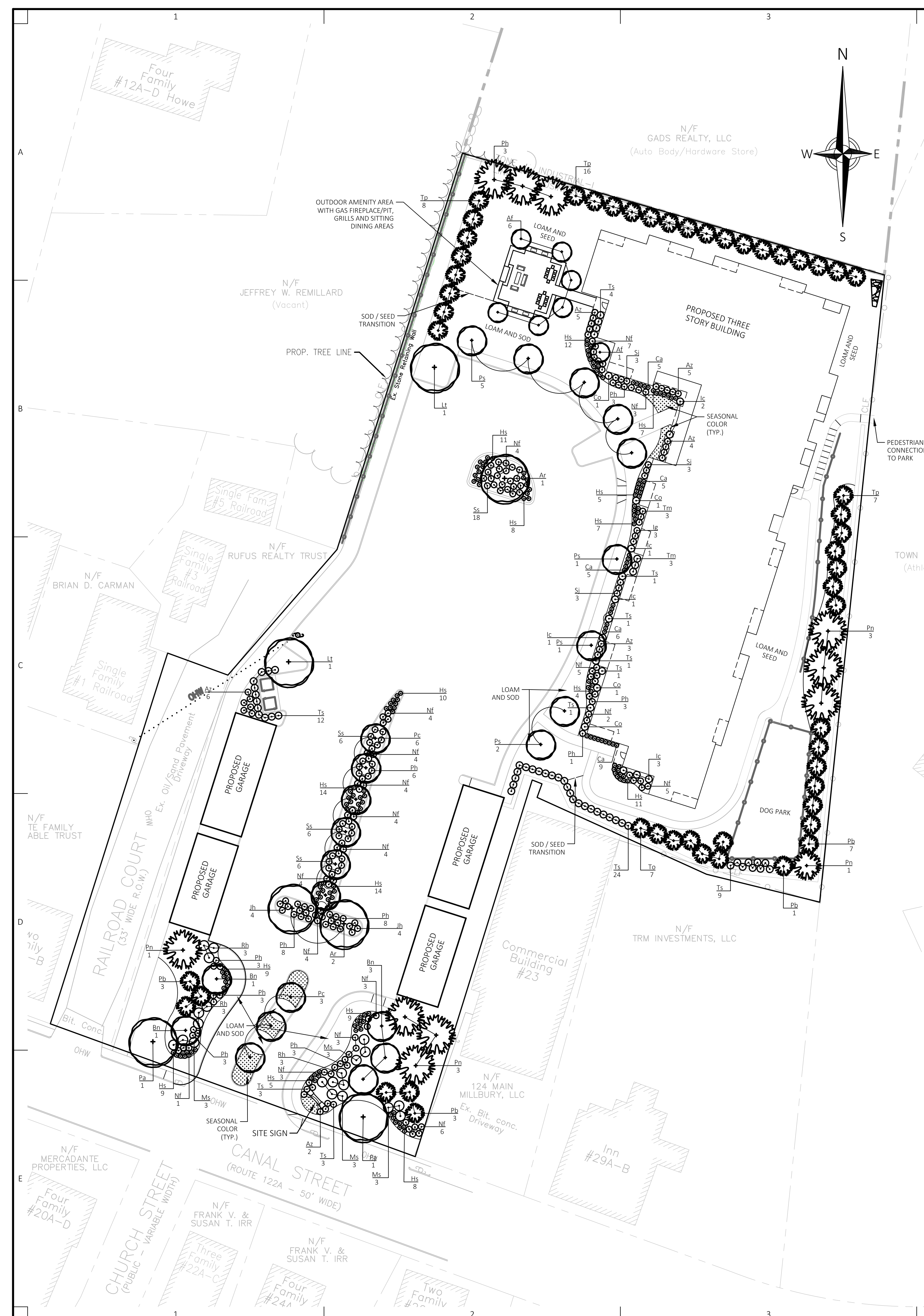
For Discussion



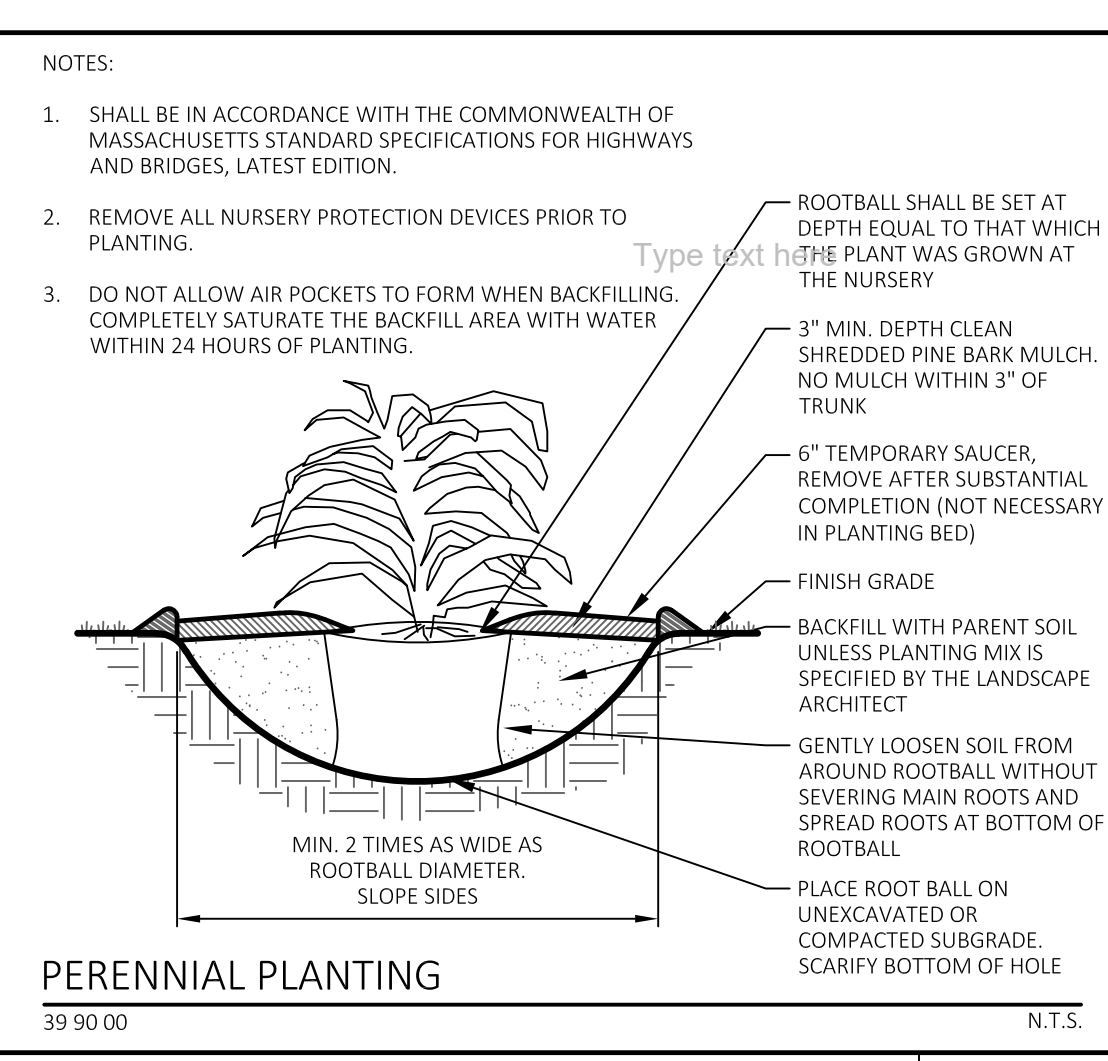
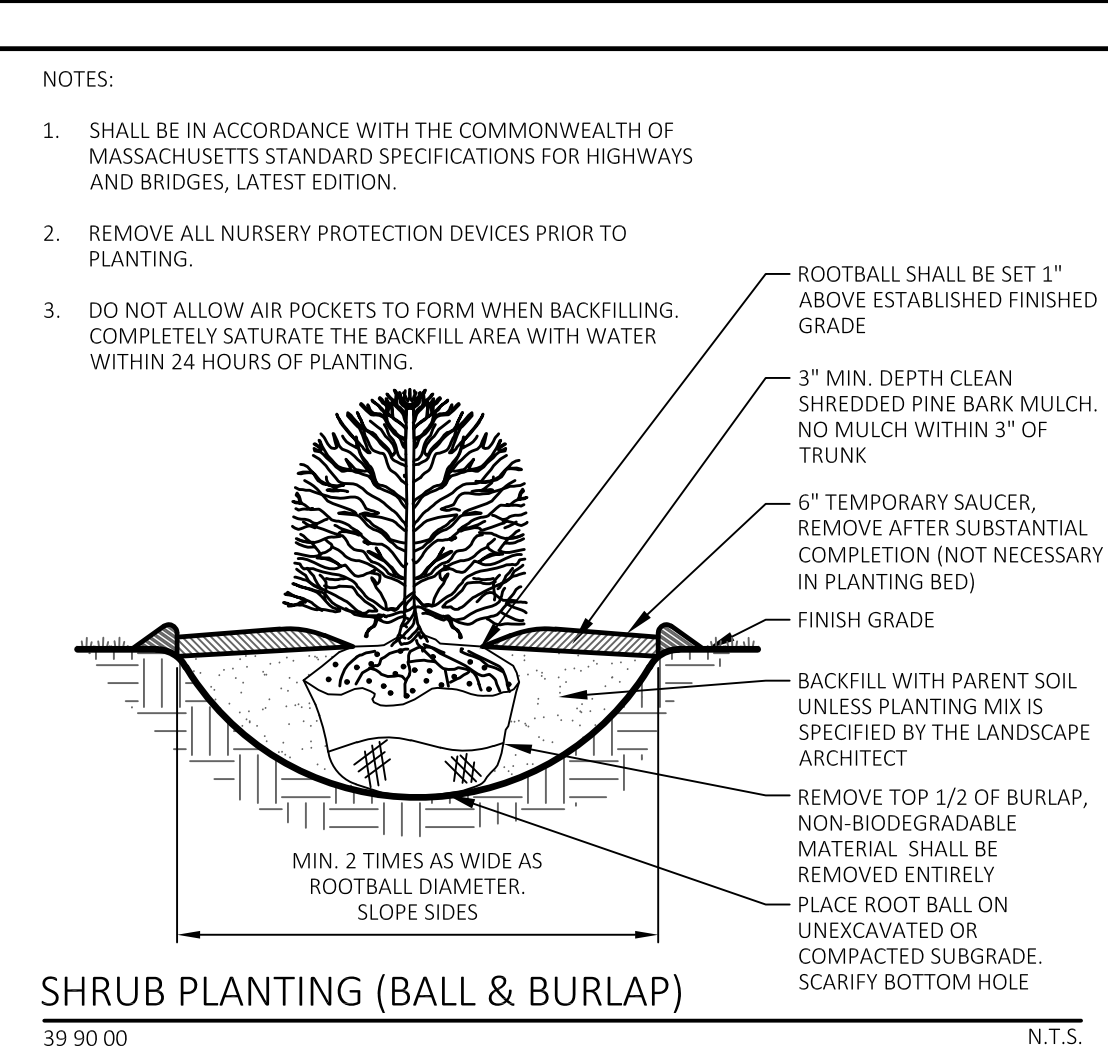
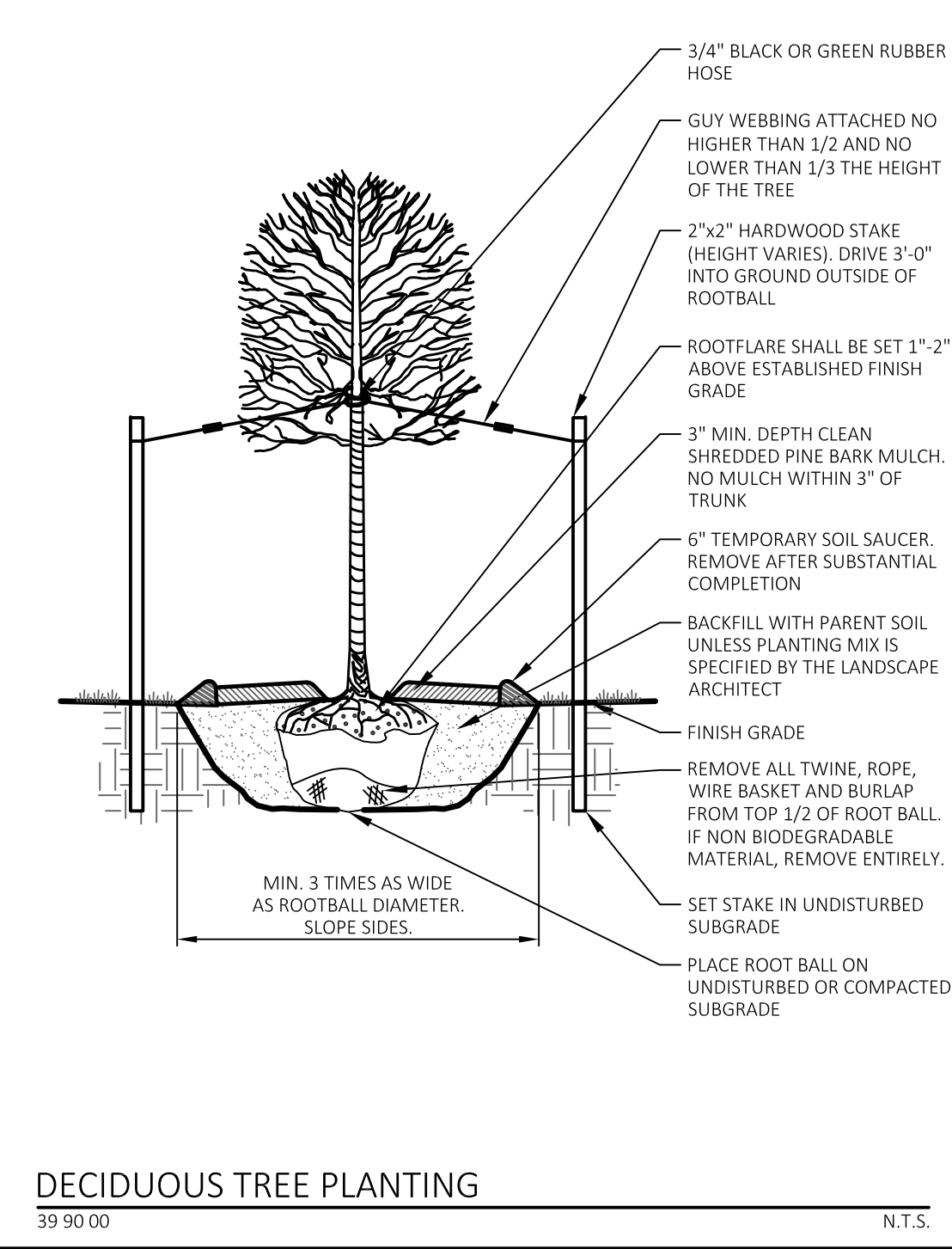
No: Date: Revision | Issue:
Drawn By: JTA Checked By: JTA
Date: 04/09/2021 Project No.: 20-0042

Sheet No.:

6 of 9



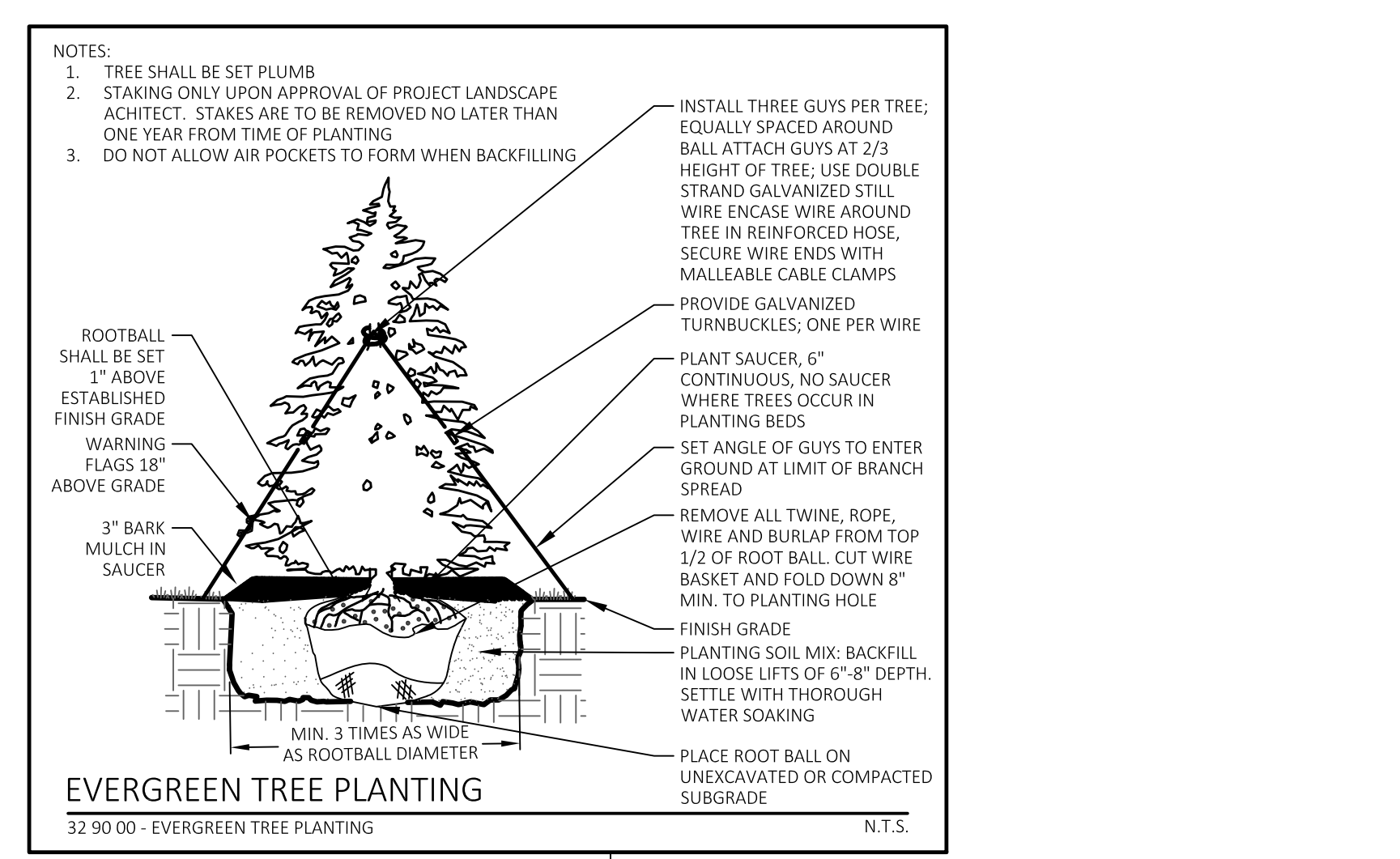
- NOTES:
- SHALL BE IN ACCORDANCE WITH THE COMMONWEALTH OF MASSACHUSETTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
 - ALL TREES SHALL CONFORM TO AAN STANDARDS PUBLICATION ANSI Z60.1.
 - TREE SHALL BE SET PLUMB AND LEVEL.
 - STAKING ONLY UPON APPROVAL OF PROJECT LANDSCAPE ARCHITECT. STAKES ARE TO BE REMOVED NO LATER THAN ONE YEAR FROM THE TIME OF PLANTING
 - REMOVE ALL NURSERY PROTECTION DEVICES PRIOR TO PLANTING.
 - DO NOT HEAVILY PRUNE TREE AT TIME OF PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES. DO NOT REMOVE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN
 - DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING. COMPLETELY SATURATE THE BACKFILL AREA WITH WATER WITHIN 24 HOURS OF PLANTING.

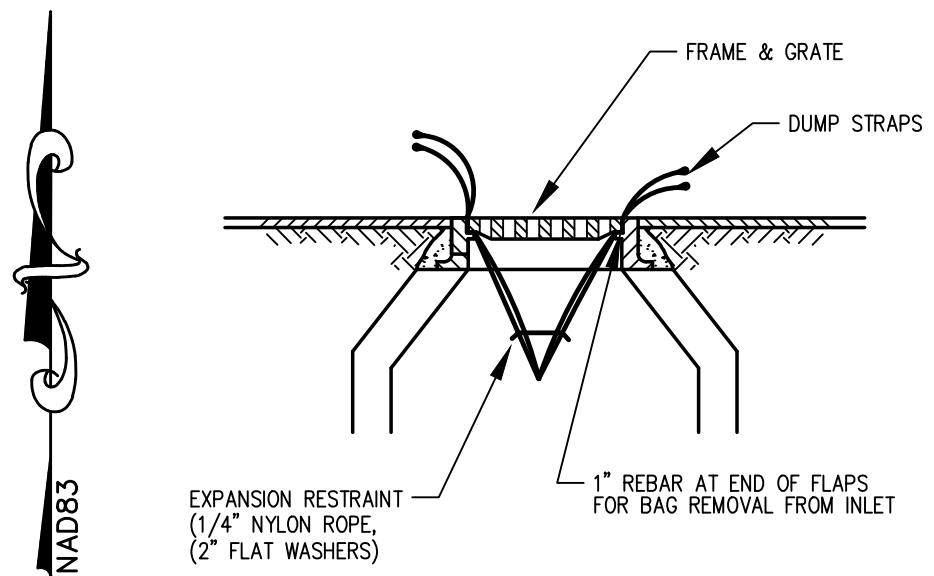
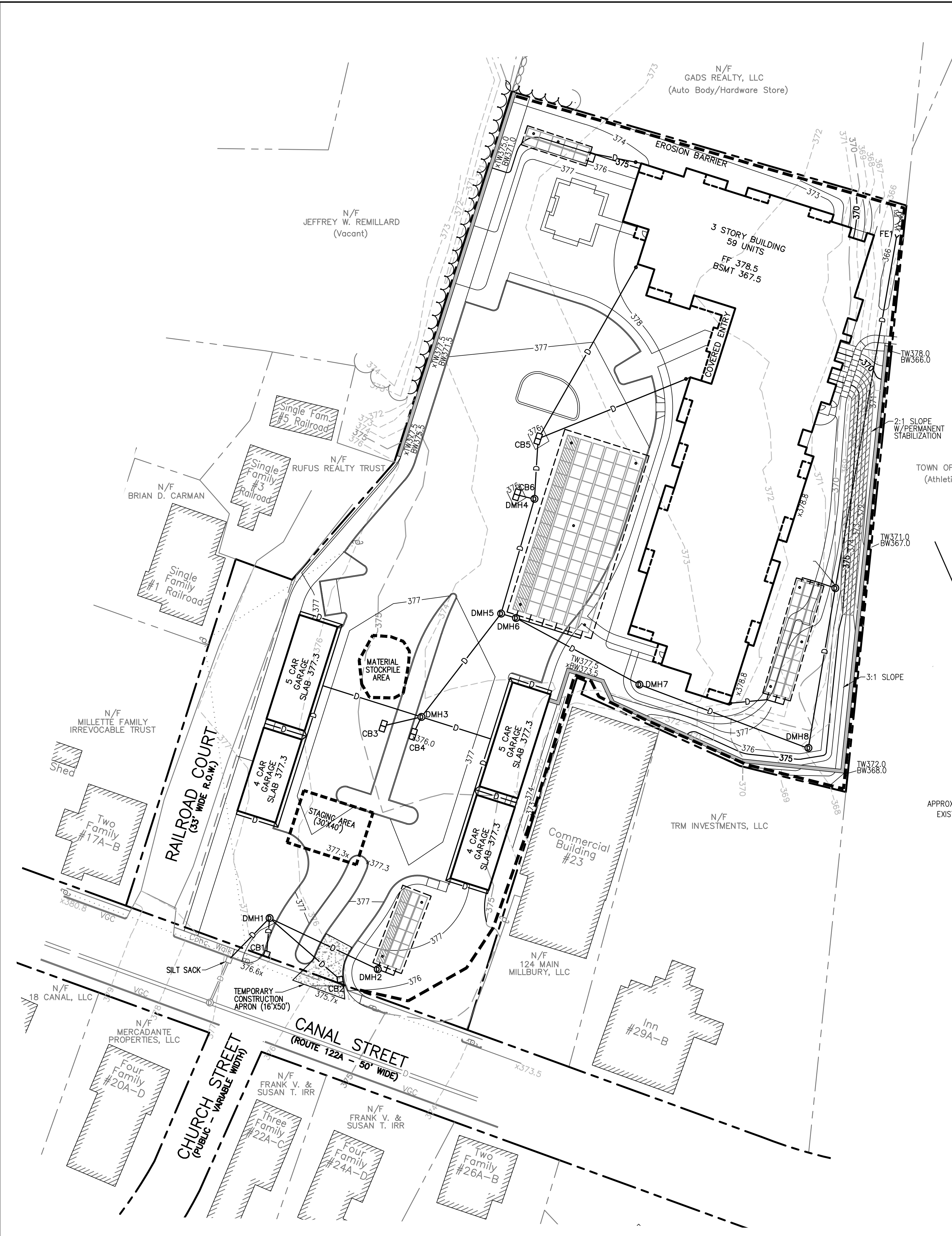


PLANTING NOTES:

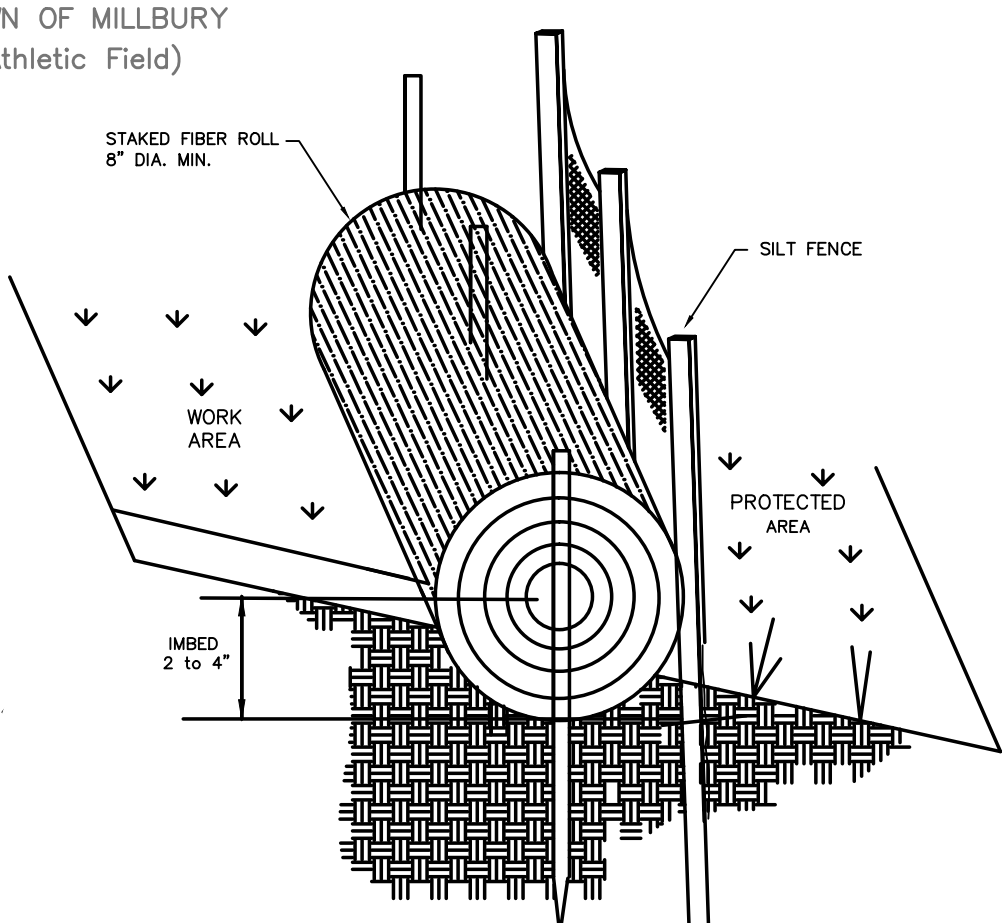
| QTY | KEY | BOTANICAL NAME | COMMON NAME | SIZE | ROOT | SPACING | COMMENTS |
|--|-----|--|------------------------------------|----------------|-----------|----------|---------------|
| DECIDUOUS TREES | | | | | | | |
| 7 | Af | Acer x freemanii 'Autumn Blaze' | Autumn Blaze Red Maple | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| 3 | Ar | Acer rubrum 'October Glory' | October Glory Red Maple | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| 5 | Bn | Betula nigra 'Heritage' | Heritage River Birch | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| 3 | Lt | Liriodendron tulipifera | Tulip Tree | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| 2 | Pa | Platanus x acerifolia 'Bloodgood' | London Plane Tree | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| 9 | Ps | Prunus sargentii 'Columbianus' | Columbian Sargent Cherry | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| 9 | Pc | Pyrus calleryana 'Chanticleer' | Chanticleer Callery Pear | 2" - 2.5" cal. | B&B | AS SHOWN | Limb up to 6' |
| EVERGREEN TREES | | | | | | | |
| 8 | Pn | Picea abies | Norway Spruce | 7" - 8" ht. | B&B | AS SHOWN | AS SHOWN |
| 14 | Pb | Picea pungens 'Baby Blue Eyes' | Baby Blue Eyes Colorado Spruce | 5" - 6" ht. | B&B | AS SHOWN | AS SHOWN |
| 14 | Ts | Thuja occidentalis 'Smaragd' | Emerald Green Arborvitae | 7" - 8" ht. | B&B | AS SHOWN | AS SHOWN |
| 7 | To | Thuja occidentalis 'Techny' | Techny American Arborvitae | 7" - 8" ht. | B&B | AS SHOWN | AS SHOWN |
| 31 | Tp | Thuja plicata | Giant Arborvitae | 7" - 8" ht. | B&B | AS SHOWN | AS SHOWN |
| SHRUBS | | | | | | | |
| 25 | Az | Azalea 'karen' | Karen Azalea | 18" - 24" ht. | CONTAINER | AS SHOWN | AS SHOWN |
| 4 | Co | Chamaecyparis obtusa 'Nana Gracilis' | Dwarf Hinoki Cypress | 4" - 5" ht. | CONTAINER | AS SHOWN | AS SHOWN |
| 8 | Ic | Ilex crenata 'Stededa' | Stededa Japanese Holly | 3" - 4" ht. | B&B | AS SHOWN | AS SHOWN |
| 3 | Ig | Ilex glabra 'Compacta' | Compact Holly | 18" - 24" ht. | B&B | AS SHOWN | AS SHOWN |
| 8 | Jh | Juniperus horizontalis compacta andorra | Andorra Juniperus | 18" - 24" sp. | CONTAINER | AS SHOWN | AS SHOWN |
| 9 | Rh | Rhododendron catawbiense 'Boursault' | Boursault Rhododendron | 3" - 4" ht. | B&B | AS SHOWN | AS SHOWN |
| 9 | Sj | Spirea japonica 'Goldflame' | Goldflame Spirea | 18" - 24" ht. | CONTAINER | AS SHOWN | AS SHOWN |
| 6 | Tm | Taxus media 'Densiformis' | Densiformis Spreading Japanese Yew | 15" - 18" ht. | B&B | AS SHOWN | AS SHOWN |
| ANNUALS, PERENNIALS AND ORNAMENTAL GRASSES | | | | | | | |
| 30 | Ca | Calamagrostis x acutiflora 'Karl Foerster' | Karl Foerster Feather Reed Grass | #2 | CONTAINER | AS SHOWN | AS SHOWN |
| 143 | Hs | Hemerocallis 'Stella D'Oro' | Stella D'Oro Daylily | #2 | CONTAINER | AS SHOWN | AS SHOWN |
| 12 | Ms | Miscanthus sinensis 'Gracillimus' | Maiden Grass | #2 | CONTAINER | AS SHOWN | AS SHOWN |
| 70 | Nf | Nepeta faassenii 'Blue Wonder' | Blue Wonder Cat Mint | #2 | CONTAINER | AS SHOWN | AS SHOWN |
| 44 | Ph | Pennisetum alopecuroides 'Hameln' | Hameln Fountain Grass | #2 | CONTAINER | AS SHOWN | AS SHOWN |
| 36 | Ss | Schizachyrium scoparium 'Standing Ovation' | Standing Ovation Little Bluestem | #2 | CONTAINER | AS SHOWN | AS SHOWN |

- PLANTING NOTES:
- ALL PLANT MATERIAL SHALL MEET THE SPECIFICATIONS AND GUIDELINES OF THE AMERICAN STANDARD FOR NURSERY STOCK ISSUED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
 - ANY PROPOSED SUBSTITUTION OF PLANT MATERIAL SHALL BE EQUAL IN OVERALL SIZE, HEIGHT, LEAF, FORM, BRANCHING HABIT, FRUIT, FLOWER, COLOR, AND CULTURE. ALL PROPOSED SUBSTITUTIONS SHALL BE REVIEWED AND APPROVED IN WRITING BY LANDSCAPE ARCHITECT PRIOR TO PURCHASING.
 - FINAL QUANTITIES FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLANS. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE LANDSCAPE CONTRACTOR SHALL REPORT AND DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
 - THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL AT THE SITE. MATERIAL SHALL BE REMOVED FROM THE PROPERTY BY THE LANDSCAPE CONTRACTOR AND REPLACED WITH PLANT MATERIAL APPROVED BY LANDSCAPE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
 - ALL TREES SHALL BE BAILED AND BURLAPPED UNLESS OTHERWISE SPECIFIED.
 - THE LANDSCAPE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW AND ABOVE GRADE UTILITIES AND NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS.
 - ALL TREE PLANTINGS TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION FROM PROPOSED AND EXISTING SEWER AND WATER LINES.
 - ALL PLANTING BEDS ARE TO BE CROWNED WITH TOPSOIL AND MULCH ABOVE ADJACENT AREAS.
 - NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICT.
 - THE LANDSCAPE CONTRACTOR SHALL LAYOUT ALL PLANT MATERIAL AS SHOWN ON THE PLANS AND SHALL NOTIFY THE LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO INSTALLATION FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.
 - PROVIDE A 3" DEPTH OF MULCH AS SHOWN ON THE PLANTING DETAILS UNDER AND AROUND ALL PLANT MATERIAL AND IN ALL PLANT BEDS AND LANDSCAPE ISLANDS. MULCH SHALL BE CLEAN, SHREDDED PINE BARK MULCH UNLESS OTHERWISE SPECIFIED. PRIOR TO SPREADING MULCH, APPLY A WEED PRE-EMERGENT SUCH AS "PREEM" OR APPROVED EQUAL. FOLLOW MANUFACTURER'S APPLICATION INSTRUCTIONS.
 - ALL TREES ADJACENT TO SIDEWALKS SHALL HAVE A 6"-8" MINIMUM BRANCHING HEIGHT AT TIME OF PLANTING.
 - LAWN AND DISTURBED SHALL RECEIVE A MINIMUM OF 6" OF LOAM AND SPECIFIED SEED MIX UNLESS OTHERWISE NOTED. AREAS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
 - THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE MAINTENANCE OF THE PLANT MATERIAL AND LAWN AREAS UNTIL DATE OF FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT. WATERING SHALL BE PROVIDED DURING THE FIRST GROWING SEASON WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
 - IF AN IRRIGATION SYSTEM IS PROVIDED THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL COORDINATION WITH THE IRRIGATION CONTRACTOR TO PROVIDE OTHER IRRIGATION TO ALL TREES, PLANT BEDS AND LAWN AREAS UNLESS OTHERWISE NOTED. IRRIGATION DESIGN AND PERMITTING TO BE PROVIDED BY OTHERS.
 - ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE LANDSCAPE CONTRACTOR FOR A PERIOD OF ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT. ALL REPLACEMENTS SHALL BE AT NO ADDITIONAL COST TO OWNER.

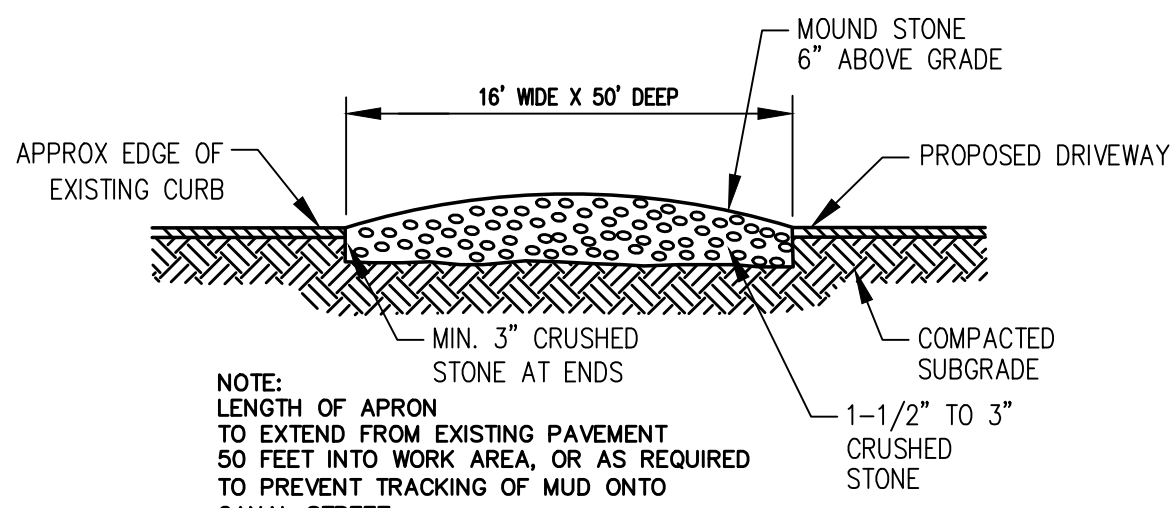




SILT SACK DETAIL
NOT TO SCALE



SILT FENCE/STRAW WATTLE BARRIER DETAIL
NOT TO SCALE



CONSTRUCTION ENTRANCE APRON
NOT TO SCALE

STORMWATER COLLECTION & TREATMENT SYSTEM INSPECTION & MAINTENANCE GUIDELINES

- Seeding and repairs shall be performed as required. Sediment and debris shall be removed at least once a year, typically in early spring prior to the commencement of the growing season.
- The catch basins throughout the entire site shall be inspected annually. Unit shall be cleaned when accumulated sediments reach a depth of 6 inches. Accumulated sediment must be disposed of in accordance with applicable local state, and federal guidelines and regulations. The contractor will be responsible for the maintenance of the unit until such time as the site work is complete. The maintenance will then be the responsibility of the owner(s).
- The Stormceptor units shall be inspected and cleaned as recommended by the manufacturer.
- The subsurface infiltration systems shall be inspected after every storm for the first 3 months to ensure proper function. It shall be inspected once per year after that. Water levels should be inspected and recorded for several days after a major storm event to check infiltration capacity.
- The contractor will be responsible for the maintenance of all drainage structures and until such time as the site work is complete. The maintenance will then be the responsibility of the property owners.

GENERAL:

1. THIS PLAN IS INTENDED TO PROVIDE GUIDANCE AND INSTRUCTION TO THE TOWN OF MILLBURY AND THE CONTRACTOR(S) IN THE PREVENTION OF EROSION AND SEDIMENTATION OFF SITE. THIS PLAN IS INTENDED TO ALLOW ANY CONDITIONS OF APPROVAL TO BE MORE SPECIFIC IN ADDRESSING ITEMS OF CONCERN. IF CONDITIONS BY THE TOWN OF MILLBURY ARE IN CONFLICT WITH REQUIREMENTS AS SPECIFIED ON THE PLANS CONDITIONS AS SPECIFIED BY THE TOWN OF MILLBURY SHALL SUPRESEDE THE REQUIREMENTS SPECIFIED ON THESE PLANS.

PRE-CONSTRUCTION:

- AN EROSION CONTROL BARRIER (SEE BELOW) SHALL BE INSTALLED AS DEPICTED ON THE PLANS, BETWEEN THE AREAS TO BE DISTURBED AND RECEIVING DRAINAGE WAY AND STRUCTURES. THIS BARRIER SHALL REMAIN IN PLACE UNTIL ALL TRIBUTARY SURFACES HAVE BEEN FULLY STABILIZED. THE EROSION CONTROL BARRIERS AS SHOWN ON THE PLANS ARE THE MINIMUM PROTECTIVE MEASURES REQUIRED TO PROTECT THE ON AND OFF SITE DRAINAGE SYSTEMS.
- THE CONTRACTOR SHALL ESTABLISH A STAGING AREA AS SHOWN ON THE PLAN FOR THE OVERNIGHT STORAGE OF EQUIPMENT AND STOCKPILING OF MATERIALS.
- IN THE STAGING AREA, THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO: HAY BALES, SILT FENCE AND CRUSHED STONE.
- A TEMPORARY STONE CONSTRUCTION ENTRANCE IS REQUIRED TO PREVENT TRACKING OF SILT, MUD, ETC. ONTO EXISTING ROADS. THE STONE SHALL BE REPLACED REGULARLY AS WELL AS WHEN THE STONE IS SILT LADEN OR EQUIPMENT IS OBSERVED TO BE TRACKING SOIL ONTO THE ROADWAYS. SEE GENERAL CONSTRUCTION REQUIREMENTS, SEE NOTE #4 BELOW.
- IF THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON & OFF SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED HEREIN, ON THE PLAN OR IN ANY ORDER OF CONDITIONS.

PRELIMINARY SITE WORK:

- MATERIAL REMOVED SHOULD BE STOCKPILED, SEPARATING THE TOPSOIL FOR FUTURE USE ON THE SITE OR IN A SECURED OFF SITE AREA APPROVED BY THE OWNER. EROSION CONTROLS SHALL BE UTILIZED ALONG THE DOWN SLOPE OF THE PILES IF THE PILES ARE TO REMAIN FOR MORE THAN THREE WEEKS.
- IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL HAY BALE DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE UTILIZED.
- IF THE SITE CONSTRUCTION OCCURS AT ANY TIME OTHER THAN THE APRIL - DECEMBER CONSTRUCTION SEASON, ALL DRAINAGE SYSTEMS TEMPORARY OR PERMANENT SHALL MAINTAIN TO ENSURE ADEQUATE HYDRAULIC CAPACITY, AND DRAINING CHARACTERISTICS.

EROSION CONTROL MEASURES:

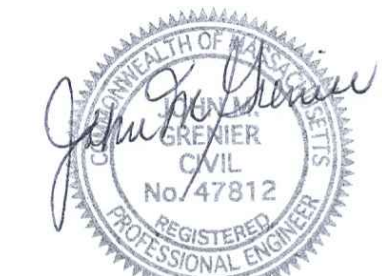
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EROSION AND SEDIMENTATION ARE CONTROLLED. THIS PLAN SHALL BE SHALL BE ADAPTED TO FIT THE CONTRACTOR'S EQUIPMENT, WEATHER CONDITIONS, AND ANY CONDITIONS ISSUED BY THE TOWN OF MILLBURY.
- THE MOST IMPORTANT ASPECTS OF CONTROLLING EROSION AND SEDIMENTATION ARE LIMITING THE EXTENT OF DISTURBANCE AND STABILIZING SURFACES AS SOON AS POSSIBLE. OF SECONDARY IMPORTANCE IN EROSION CONTROL IS THE LIMITING THE SIZE AND LENGTH OF THE TRIBUTARY DRAINAGE AREA WITHIN THE WORK SITE AND DRAINAGE STRUCTURES. THESE FUNDAMENTAL PRINCIPLES SHALL BE THE KEY FACTOR IN THE CONTRACTOR'S CONTROL OF EROSION ON THE SITE.
- THE EXISTING SOIL CONDITIONS PROVIDE THE POTENTIAL OF RUNOFF TO OFF-SITE AREAS WITH EROSION POTENTIAL.
- ALL DISTURBED SURFACES SHALL BE STABILIZED A MINIMUM OF 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE HAS CEASED OR IS TEMPORARILY HALTED UNLESS ADDITIONAL CONSTRUCTION IS INTENDED TO BE INITIATED WITHIN 21 DAYS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF ALL EROSION CONTROL DEVICES WITHIN THE LIMIT OF WORK. ALL EROSION CONTROL DEVICES SHALL BE REGULARLY INSPECTED. ANY SEDIMENTS REMOVED FROM THE CONTROL DEVICES SHALL BE DISPOSED OF.
- AT NO TIME SHALL SILT-LADEN WATER BE ALLOWED TO ENTER SENSITIVE AREAS (WETLANDS, OFF-SITE AREAS AND DRAINAGE SYSTEMS). ANY RUNOFF FROM DISTURBED SURFACES SHALL BE DIRECTED THROUGH SETTLING BASINS AND EROSION CONTROL BARRIERS PRIOR TO ENTERING ANY SENSITIVE AREAS.

GENERAL CONSTRUCTION REQUIREMENTS:

- ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL NOT TAKE PLACE INSIDE OF A 100 FOOT BUFFER ZONE, NEAR THE ENTRANCE TO ANY DRAINAGE SYSTEM AND SHALL NOT BE CONDUCTED IN PROXIMITY TO SEDIMENTATION BASINS OR DIVERSION SWALES.
- NO ON-SITE DISPOSAL OF STUMPS, SOLID WASTE, INCLUDING CONSTRUCTION MATERIALS IS ALLOWED.
- NO MATERIALS SHALL BE DISPOSED OF INTO THE WETLANDS, OR EXISTING/PROPOSED DRAINAGE SYSTEMS. ALL CONTRACTORS INCLUDING: CONCRETE SUPPLIERS, PAINTERS AND PLASTERERS, SHALL BE INFORMED THAT THE CLEANING OF EQUIPMENT IS PROHIBITED IN AREAS WHERE THE WASH-WATER WILL DRAIN DIRECTLY TO THE SITE DRAINAGE SYSTEMS.
- CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL WHICH SHALL INCLUDE STREET SWEEPING AND/OR WATERING OF ALL PAVED SURFACES WITHIN THE SITE AND OFF-SITE THAT ARE IMPACTED BY SITE CONSTRUCTION ON A REGULAR BASIS, A MINIMUM OF ONCE PER WEEK AND/OR AS NECESSARY.
- THE CONTRACTOR SHALL UNDERTAKE ALL WORK TO LIMIT AIRBORNE SEDIMENTS, ONLY CLEAN, POTABLE WATER MAY BE USED TO CONTROL DUST.

LANDSCAPING:

- LANDSCAPING SHALL OCCUR AS SOON AS POSSIBLE TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.
- CONTRACTOR SHALL UTILIZE A VARIETY OF SLOPE STABILIZATION METHODS AND MATERIALS WHICH SHALL BE ADJUSTED TO THE SITE CONDITIONS. EROSION CONTROL BLANKETS OR MIRAFI MIRAMAT (OR SIMILAR PRODUCTS) SHALL BE AVAILABLE ON SITE.
- IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH HAY, TACKIFIED WOOD CHIPS OR OTHER METHODS SHALL BE PROVIDED.
- ALL DISTURBED SURFACES TO BE PLANTED SHALL RECEIVE A MINIMUM OF 6" TOPSOIL SHALL BE PLACED AND ITS SURFACE SMOOTHED TO THE SPECIFIED GRADES.
- ALL SLOPES OF 2:1 OR GREATER SHALL BE STABILIZED WITH EROSION CONTROL FABRIC.
- SEED APPLICATIONS SHALL BE IN ACCORDANCE WITH THE GRASS AND SLOPE COVER SPECIFICATIONS.
- TO ENSURE A DENSE, SUCCESSION GROWTH, SEED IS REQUIRED ON ALL DISTURBED SURFACES.

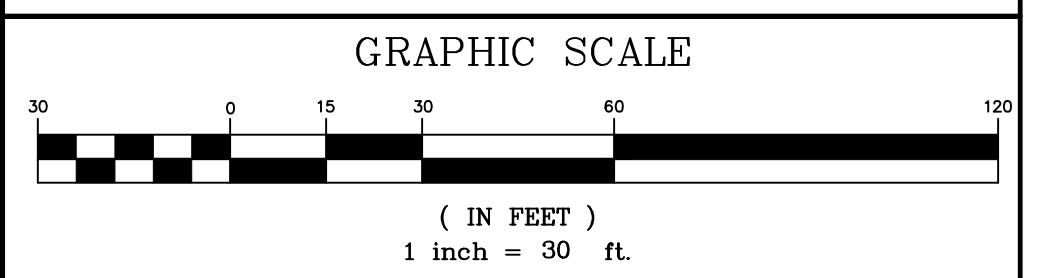


SITE PLAN APPROVAL
MILLBURY PLANNING BOARD

DATE: _____

LEGEND:

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| --- | EXISTING PROPERTY LINE |
| --- | EXISTING EASEMENT LINE |
| --- | EXISTING CONTOUR - HIGH |
| --- | EXISTING CONTOUR - LOW |
| --- | PROPOSED CONTOUR - HIGH |
| --- | PROPOSED CONTOUR - LOW |
| --- | EXISTING EDGE PAVEMENT |
| --- | EXISTING CURB |
| --- | PROPOSED EDGE OF PAVEMENT |
| --- | PROPOSED GRANITE CURB |
| --- | EXISTING TREE LINE |
| --- | PROPOSED TREE LINE |
| --- | EXISTING STONE WALL |
| --- | EXISTING DRAIN LINE |
| --- | PROPOSED DRAIN LINE |
| --- | EXISTING SEWER LINE |
| --- | PROPOSED SEWER LINE |
| --- | EXISTING WATER LINE |
| --- | PROPOSED WATER LINE |
| --- | EXISTING GAS LINE |
| --- | PROPOSED GAS LINE |
| --- | EXISTING OVERHEAD WIRES |
| --- | PROPOSED UNDERGROUND ELECTRIC |
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| REV. NO. | DATE | REVISION |
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TITLE:
SITE DEVELOPMENT PLAN
FOR
19 CANAL STREET
MILLBURY, MASSACHUSETTS 01527

PREPARED FOR:
ELITE HOME BUILDERS, LLC
P.O. BOX 1205
WESTBOROUGH, MASSACHUSETTS 01581

PREPARED BY:
J.M. GRENIER ASSOCIATES INC.
325 DONALD LYNCH BOULEVARD SUITE 100
MARLBOROUGH, MASSACHUSETTS 01752

TELE NO.: (508) 845-2500
SCALE: 1" = 30'
DATE: APRIL 9, 2021

EROSION & SEDIMENTATION CONTROL PLAN

SHEET NO.: SHEET 7 OF 9
PROJECT NO.: G-611

