

ATTAR

ENGINEERING, INC

CIVIL STRUCTURAL MARINE

Adam Causey, Director of Planning and Development
Town of Kittery
P.O. Box 808
Kittery, Maine 03904

June 30, 2022
Project No.: C277-22

**Re: 41 Route 236
Adult-Use Marijuana Retail
Tax Map 29 Lot 1**

Dear Mr. Causey:

On behalf of the applicant, Well Field 44 LLC, I have enclosed an Application for Site Plan Review in addition to an Application for Wetland Alteration for an Adult-Use Marijuana Store located at 41 Route 236 in Kittery for your review and consideration.

The application is proposing the construction of a 517 S.F two story (1,034 S.F gross floor area) store. The entrance and parking areas will be paved. The store will have one restroom and will be served by Town Sewer and Water.

The existing developed portion of the site is grass field that is currently used for boat storage. A proposed improved entrance onto Route 236 will result in approximately 2,212 S.F. of wetland alteration; the removal of approximately 10,414 S.F. (4.7 to 1 ratio) of previously filled wetland area in the western portion of the developed site is proposed as mitigation for this impact.

I have also included supporting materials consisting of soils and wetland reports, a traffic impact study and additional trip generation analysis information.

Additionally, I offer the following waiver requests for consideration;

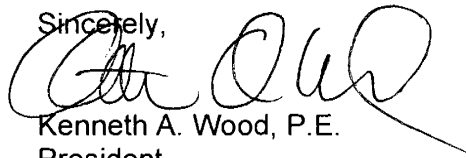
- 1) Sec 16.7.10.C.4.k (3) – Test Pits for wastewater disposal: N/A as parcel is served by municipal sewer.
- 2) Sec 16.7.10.C.4.k (9) – Machinery permanently installed causing noise at lot lines: N/A as no exterior machinery will result in noise at abutting lot lines.
- 3) Sec 16.7.10.C.4.k (10) Raw or unfinished materials to be stored outside the building or any stored toxic or hazardous materials: N/A as there will be no exterior storage of materials or any storage of toxic or hazardous materials.

Please note the locations of 2 potential vernal pools on the parcel; one in the northern corner of the lot and the second along the southern boundary sideline. These areas were evaluated by Michael Cuomo, CWS, on June 7, 2022, after the suggested vernal pool evaluation season – hence, conservatively, these are noted as “potential”. The Maine Department of Environmental protection guidelines for vernal pools of special significance allow 25% disturbance within 250’ of the pool boundary. There is a minor addition impact (845 S.F.) from the connector drive which is approximately 185’ from the nearest pool – located on the southern sideline. The second impact area, resulting from the Route 236 entrance, is located approximately 150’ from the nearest pool – located in

the northern corner. Both impacts result is substantially less than the 25% allowable threshold.

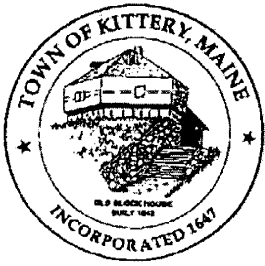
Thank you for your consideration and we look forward to discussing the project at the next available meeting.

Sincerely,

A handwritten signature in black ink, appearing to read 'K.A. Wood', with a long horizontal flourish extending to the right.

Kenneth A. Wood, P.E.
President

cc: Well Field 44, LLC



TOWN OF KITTERY, MAINE

TOWN PLANNING AND DEVELOPMENT DEPARTMENT

200 Rogers Road, Kittery, Maine 03904
 PHONE: (207) 475-1323 - FAX: (207) 439-6806
www.kittery.org

APPLICATION: SITE PLAN REVIEW

FEE FOR SITE PLAN REVIEW:	<input checked="" type="checkbox"/> \$300.00 PLUS THE GREATER OF:	<input type="checkbox"/> \$50/USE OF UNIT; OR	<input checked="" type="checkbox"/> \$5.00/100 SQ FT OF GROSS FLOOR AREA	Application Fee Paid: \$ 355 Date: 06/30/22						
		<input type="checkbox"/> \$0.50/LINEAR FOOT OF DOCK, SLIP & FLOAT; OR	<input type="checkbox"/> \$20.00/ UNIT INTENDED TO PROVIDE OVERNIGHT SLEEPING ACCOMMODATIONS	ASA Fee Paid: (TITLE 3.3 TOWN CODE) \$ _____ Date: _____						
PROPERTY DESCRIPTION	Parcel ID	Map	29	Lot	1	Zone:	R-S, C-2	Total Land Area (Square Feet)	193,524 sq. ft. (4.44 Ac.)	
	Base:	Overlay:	MS4:			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
	Physical Address	41 Route 236 (Harold L. Dow Highway), Kittery ME 03904								
PROPERTY OWNER'S INFORMATION	Name	Green Grass, LLC.				Mailing Address	32 Route 236, Kittery ME 03904			
	Phone	207.252.2332								
	Fax									
	Email	DLapierre@comcast.net								
APPLICANT'S AGENT INFORMATION	Name	Michael J. Sudak				Name of Business	Attar Engineering, Inc.			
	Phone	207.439.6023				Mailing Address	1284 State Road, Eliot ME 03903			
	Fax	207.439.2128								
	Email	mike@attarengineering.com								
PROJECT DESCRIPTION	Existing Use:									
	Boat Storage Area. All development is to occur within a previously filled & impacted wetland with the exception of a new access onto Route 236 which results in 2,212 sq. ft. of impacts. Mitigation is proposed by the removal of 10,414 sq. ft. of existing wetland fill, providing a 4.7:1 compensation ratio.									
	Project Name:	Well Field 44 Cannabis Dispensary								
	Proposed Use: Construction of a 517 square-foot, two-story (1,034 sq. ft. gross floor area) cannabis dispensary to serve as Adult-Use Marijuana Retail store. Development includes on-site parking and connection to municipal utilities. All development is to occur within a previously filled & impacted wetland with the exception of a new access onto Route 236 which results in 2,212 sq. ft. of impacts. Mitigation is proposed by the removal of 10,414 sq. ft. of existing wetland fill, providing a 4.7:1 compensation ratio.									

WAIVER REQUEST

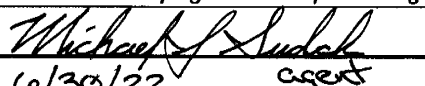
DESCRIPTION	Ordinance Section	Describe why this request is being made.
	EXAMPLE 16.32.560 (B)- OFFSTREET PARKING.	***EXAMPLE*** Requesting a waiver of this ordinance since the proposed professional offices have a written agreement with the abutting Church owned property to share parking.
		See attached Cover Letter.

Related Kittery Land Use Code concerning waivers and modifications:

16.10.8.2.5 Conditions or Waivers.

Conditions required by the Planning Board at the final plan review phase must have been met before the final plan may be given final approval unless so specified in the condition or specifically waived, upon written request by the applicant, by formal Planning Board action wherein the character and extent of such waivers which may have been requested are such that they may be waived without jeopardy to the public health, safety and general welfare.

16.7.4.1 Objectives Met. In granting modifications or waivers, the Planning Board must require such conditions as will, in its judgment, substantially meet the objectives of the requirements so waived or modified.

I certify that, to the best of my knowledge, the information provided in this application is true and correct and will not deviate from the plans submitted without notifying the Kittery Planning Department of any changes.			
Applicant's Signature:		Owner's Signature:	<hr/>
Date:	6/30/22 cgest	Date:	<hr/>

COMPLETED BY OFFICE STAFF

ASA CHARGE	AMOUNT	ASA CHARGE	AMOUNT
REVIEW		SERVICES	
LEGAL FEES (TBD)		RECORDER	\$35
ENGINEERS REVIEW (TBD)		FACT FINDING (TBD)	
ABUTTER NOTICES		3 RD PARTY INSPECTIONS (TBD)	
POSTAGE	\$20	OTHER PROFESSIONAL SERVICES	\$50
LEGAL NOTICES		PERSONNEL	
ADVERTISING	\$300	SALARY CHARGES IN EXCESS OF 20 HOURS	
SUPPLIES			
OFFICE	\$5		
SUB TOTAL		SUB TOTAL	
		TOTAL ASA REVIEW FEES	

Minimum Submission Requirements



15 COPIES OF THIS APPLICATION

15 COPIES OF THE PROPOSED SITE PLAN – 12 REDUCED SIZE AT 11"X17"AND 3 FULL SIZE AT 24"X 36"

1 PDF OF THE SITE PLAN SHOWING GPS COORDINATES

SUBMITTALS THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.

Related Ordinances: Kittery Land Use Code- Title 16

16.10.5.2 Planner Review and Confirmation of Submittal Content - Preliminary Plan.

A completed application must include on the plan or attached thereto, the following items, unless upon the applicant's written request, the Planning Board, by formal action, waives or defers any requirement(s) for submission.

- A. A minimum of fifteen (15) paper copies of the application form, plan and all attachments thereto plus if applicable, five (5) paper copies of the 24 x 36 inches size plan sheets.
- B. Plan must include:
 1. Plan sheets drawn on a reproducible medium and must measure no less than eleven (11) inches by seventeen (17) inches and no larger than twenty-four (24) inches by thirty-six (36) inches; with a:
 2. Scale of the drawings no greater than one inch equals thirty (30) feet for developments less than ten (10) acres, and one inch equals fifty (50) feet for all others;
 3. Code block in the lower right-hand corner. The block must contain:
 - a. Name(s) and address(es) of the applicant and owner,
 - b. Name of the project.
 - c. Name and address of the preparer of the plan, with professional seal, if applicable,
 - d. Date of plan preparation/revision, and a unique ID number for the plan and any revisions;
 4. Standard boundary survey conducted by a surveyor licensed in the state of Maine, in the manner recommended by the State Board of Registration for Land Surveyors;
 5. An arrow showing true north and the magnetic declination, a graphic scale, and signature blocks for the owner(s) and members of the Planning Board;
 6. Locus map showing the property in relation to surrounding roads, within two thousand (2,000) feet of any property line of the development,
 7. Surveyed acreage of the total parcel, of rights-of-way, wetlands, and area to be disturbed and amount of street frontage;
 8. Names and addresses of all owners of record of property abutting the development, including those across a street;
 9. Locations of essential physical features such as watercourses, forest cover, and outcroppings
 10. Proposed development area conditions including, but not limited to:
 - a. Structures; their location and description including signs, to be placed on the site, floor plan of exterior walls and accesses located within one hundred (100) feet of the property line;
 - b. Utilities proposed including power, water, sewer, holding tanks, bridges, culverts and drainage ways;

- c. Sewage facilities type and placement. Test pit locations, at least two of which must meet the State of Maine Plumbing Code requirements, must be shown;
- d. Domestic water source;
- e. Parks, open space, or conservation easement locations;
- f. Lot lines, interior and exterior, right-of-way, and street alignments;
- g. Road and other paved ways plans, profiles and typical sections including all relevant data;
- h. Setbacks Existing and proposed;
- i. Machinery permanently installed locations likely to cause appreciable noise at the lot lines;
- j. Raw, finished or waste materials to be stored outside the buildings, and any stored material of a toxic or hazardous nature;
- k. Topographic contours of existing contours and finished grade elevations within the development;
- l. Sidewalks, curbs, driveways, fences, retaining walls and other artificial features locations and dimensions proposed;;
- m. Landscaping required including size and type of plant material;
- n. Temporary markers locations adequate to enable the Planning Board to readily locate and appraise the layout of the development;
- o. Land proposed to be dedicated to public use and the conditions of such dedication;
- p. Natural features or site elements to be preserved.

C. Supporting documentation must include:

- 1. Vicinity map and aerial photograph showing the property in relation to surrounding properties, roads, geographic, natural resource (wetland, etc.), historic sites, applicable comprehensive plan features such as proposed park locations, land uses, zones, and other features within five hundred (500) feet from any boundary of the proposed development;
- 2. Existing Development Area Conditions including but not limited to:
 - a. Location and description of all structures, including signs, existing on the site, together with accesses located within one hundred (100) feet of the property line;
 - b. Essential physical features such as watercourses, wetlands, flood plains, wildlife habitat areas, forest cover, and outcroppings;
 - c. Utilities existing, including power, water, sewer, holding tanks, bridges, culverts and drainage ways;
- 3. Legal interest documents showing legal interest of the applicant in the property to be developed. Such documents must contain the description upon which the survey was based;
- 4. Property encumbrances currently affecting the property, as well as any proposed encumbrances;
- 5. Water District approval letter, if public water is used, indicating there is adequate supply and pressure to be provided to the development;

6. Erosion and sedimentation control plan endorsed by the York County soil and water conservation district;
7. Stormwater management plan for stormwater and other surface water drainage prepared by a registered professional engineer including a Maintenance Plan and Agreement that defines maintenance responsibilities, responsible parties, shared costs, and schedule. Where applicable, a Maintenance Agreement must be included in the Document of Covenants, Homeowners Documents and/or as riders to the individual deed and recorded with the York County Registry of Deeds.
8. Soil survey for York County covering the development. Where the soil survey shows soils with severe restrictions for development, a high intensity Class "A" soil survey must be provided;
9. Vehicular traffic report estimating the amount and type of vehicular traffic that will be generated by the development on a daily basis and for peak hours.
10. Traffic impact analysis in accordance with subsection (E)(2) for developments involving forty (40) or more parking spaces or which are projected to generate more than four hundred (400) vehicle trips per day;
11. Test pit(s) analysis prepared by a licensed site evaluator when sewage disposal is to be accomplished by subsurface disposal, pits, prepared by a licensed site evaluator;
12. Town Sewage Department or community system authority letter, when sewage disposal is to be through a public or community system, approving the connection and its location;
 - a. Additional submissions as may be required by other sections of this Code such as for clustered development, mobile home parks, or junkyards must be provided.
 - b. Letters of evaluation of the development by the Chief of Police, Fire Chief, Commissioner of Public Works, and, for residential applications, the superintendent of schools, must be collected and provided by the Town Planner.
 - c. Additional Requirements. In its consideration of an application/plan, the Planning Board may at any point in the review, require the applicant to submit additional materials, studies, analyses, and agreement proposals as it may deem necessary for complete understanding of the application.

1. Such materials may include:

1. Traffic impact study, including the following data:

- a. An executive summary outlining the study findings and recommendations.
- b. A physical description of the project site and study area encompassed by the report with a diagram of the site and its relationship to existing and proposed development sites within the study area.
- c. A complete description of the proposed uses for the project site (in cases where specific uses have not been identified, the highest traffic generators within the category best fitting the proposed development must be used to estimate traffic generators).
- d. Existing land uses and zone(s) in the vicinity of the site must be described. Any proposals for the development of vacant parcels or redevelopment of parcels within the study area of which the municipality makes the applicant aware, must be included in the description.
- e. Roadway geometry and existing traffic control devices on all major streets and intersections affected by the anticipated traffic generated.
- f. Trip generation must be calculated for the proposed project and other proposed new projects and redevelopment projects within the study area using the most recent data available from the Institute of Transportation Engineers' (ITE) Trip Generation Guide, and/or actual field data collected from a comparable trip generator (i.e., comparable in size, location and setting). This data will be presented in a summary table

structure and how such sites compare to the proposed site; other options, if any, which could be used to deliver similar services, particularly if the proposed equipment can be co-located (shared use) on an existing structure; and an analysis to the projected life cycle of this structure and location;

- c. Certification by a structural engineer that construction of the structure satisfies all federal, state and local building code requirements as well as the requirement of maximum permitted co-location at the site as approved by the Planning Board / Town Planner;
- d. Payment of all required performance guarantees as a condition of plan approval, with a note on the plan so stating;
- e. Payment of the Planning Board application fees;
- f. And all other requirements per Section 16.10.

16.10.7.2 Final Plan Application Submittal Content.

A. A complete final plan application must fulfill all the requirements of a preliminary plan as indicated in subsection 16.36.??? of this section and must show the following items, unless the Planning Board, by formal action, upon the applicant's written request, waives or defers any requirement(s) for submission. If no changes occurred to the preliminary plan it also may be considered to be the final plan.

B. Preliminary plan information including vicinity map and any amendments thereto suggested or required by the Planning Board, or other required reviewing agency;

C. Street names and lines, pedestrian ways, lots, easements, and areas to be reserved for or dedicated to public use;

D. Street length of all straight lines, the deflection angles, radii, lengths of curves and central angles of all curves, tangent distances and tangent bearings;

E. Lots and blocks within a subdivision numbered in accordance with local practice;

F. Markers/permanent reference monuments: Their location, source references, and where required, constructed in accordance with specifications herein;

G. Structures; their location and description including signs, to be placed on the site, floor plans and elevations of principal structures as well as detail of all structures showing building materials and colors, and accesses located within one hundred (100) feet of the property line;

H. Outdoor lighting and signage plan; if the

1. Lighting plan, if the application involves the construction of more than five thousand (5,000) square feet of nonresidential floor area, or the creation of more than twenty thousand (20,000) square feet of impervious area, or the creation of three or more dwelling units in a building; prepared by a qualified lighting professional, showing at least the following at the same scale as the site plan:

- a. All buildings, parking areas, driveways, service areas, pedestrian areas, landscaping, and proposed exterior lighting fixtures;
- b. All proposed lighting fixture specifications and illustrations including photometric data, designation as "cut-off" fixtures, color rendering index (CRI) of all lamps (bulbs), and other descriptive information on the fixtures;
- c. Mounting height of all exterior lighting fixtures;
- d. Lighting analyses and luminance level diagrams or photometric point by point diagrams on a twenty (20) foot grid showing that the proposed installation conforms to the lighting level standards of the ordinance codified in this Section together with statistical summaries documenting the average luminance, maximum luminance, minimum luminance, average to minimum uniformity ratio, and maximum to minimum uniformity ratio for each parking area, drive, canopy, and sales or storage area;

e. Drawings of all relevant building elevations showing the fixtures, the portions of the walls to be illuminated, the luminance levels of the walls, and the aiming points for any remote light fixtures; and

f. A narrative that describes the hierarchy of site lighting hierarchy and how the lighting will be used to provide safety, security, and aesthetic effects.

I. Machinery permanently installed locations likely to cause appreciable noise at the lot lines;

J. Materials (raw, finished or waste) storage areas, their types and location; and any stored toxic or hazardous materials, their types and locations;

K. Fences, retaining walls and other artificial features locations and dimensions proposed;

L. Landscaping plan including location, size, and type of plant material;

M. Boundary markers for protected land areas permanently marked using Town environmental boundary markers, their location and type. The five boundary markers are: (1) Conservation Land, (2) Protected Wetland, (3) Protected Vernal Pool, (4) Wildlife Habitat, and (5) Wetlands. Depending on the proposed development the required marker(s), number of markers, placement and spacing, and the method of mounting.

N. Municipal impact analysis of the relationship of the revenues to the Town from the development and the costs of additional publicly funded resources including;

1. Review for impacts. A list of the construction items that will be completed by the developer prior to the sale of lots.

2. Municipal construction and maintenance items. A list of construction and maintenance items that must be borne by the municipality, which must include, but not be limited to:

a.. Schools, including busing;

b. Road maintenance and snow removal;

c. Police and fire protection;

d. Solid waste disposal;

e. Recreation facilities;

f. Runoff water disposal drainage ways and/or storm sewer enlargement with sediment traps

3. Municipal costs and revenues. Cost estimates to the Town for the above services and the expected tax revenue of the development.

O. Open Space Land Cession Offers. Written offers of cession to the municipality of all public open space shown on the plan, and copies of agreements, or other documents showing the manner in which space(s), Code to which is reserved by the subdivider, are to be maintained.

P. Open Space Land Cession Offers Acknowledgement by Town. Written evidence that the municipal officers are satisfied with the legal sufficiency of the documents referred to in subsection (C)(2)(a) of this section. Such written evidence does not constitute an acceptance by the municipality of any public open space referred to in subsection (C)(2)(a) of this section.

Q. Performance Guaranty and Town Acceptance to secure completion of all improvements required by the Planning Board and written evidence the Town manager is satisfied with the sufficiency of such guaranty.

1. Where improvements for the common use of lessees or the general public have been approved, the Planning Board must require a performance guaranty of amount sufficient to pay for said improvements as a part of the agreement.

2. Process. Prior to the issue of a building permit, the applicant must, in an amount and form acceptable to the Town manager, file with the municipal treasurer an instrument to cover the full cost of the required improvements. A period of one year (or such other period as the Planning Board may determine appropriate, not to exceed three years) is the guaranty time within which required improvements must be completed. The performance guaranty must include an amount required for recreation land or improvements as specified.

R. Maintenance Plan and Agreement defining maintenance responsibilities, responsible parties, shared costs, and schedule. Where applicable, a Maintenance Agreement must be included in the Document of Covenants, Homeowners Documents and/or as riders to the individual deed.

S. Phasing Plan. Where, upon applicant's request, the Planning Board may permit phasing of the plans where it can be demonstrated to the Planning Board's satisfaction that such phasing would result in a safe and orderly development of the plan.

1. The applicant may file a section of the approved plan with the municipal officials and the York County registry of deeds if said section constitutes at least twenty-five percent (25%) of the total number of lots, or for plans including buildings, twenty-five percent (25%) of the gross area, contained in the approved plan. In all circumstances, plan approval of the remaining sections of the plan will remain in effect for three years unless the applicant requests and the Planning Board grants extensions of time equivalent to the requirements for approved plans in Section 16.36.050(E).

2. Phasing is subject to any conditions deemed necessary to assure a reasonable mixture of uses is completed within each separate phase of the plan.

3. Where projects are to be constructed in phases, phasing of stormwater management, water mains and streets are part of the review process.

4. Portions of both the developed and undeveloped site, impacted by interim infrastructure conditions such as un-looped water systems, stormwater runoff from unfinished areas onto finished areas and vice versa, dead end streets, etc., must be clearly defined and shown on the plans.

5. The Planning Board may permit construction of phases "out of order" only when the storm drainage plan and the water plan, etc. have been reviewed and it has been demonstrated that the impact on both the developed and undeveloped sections is negligible.

T. Right-of-Way Plan.

1. A completed application for a Planning Board approved right-of-way must include the requirements of Section 16.36.060 with the following modifications:

a. The following submission requirements are not necessary for Right-of-Way review: subsections (B)(2)(l), (m), (p), (r)—(w) and (z); (B)(3)(c)—(h); (B)(4); and (B)(5) of this section.

b. Subsection (B)(2) of this section modified so floor plans and elevations of principal structures are not required;

c. Include the size of the parcel minus the area in the ROW, and the street frontage excluding the ROW;

d. Only need to show and locate on the plan the names and addresses of all owners of record of contiguous property, including those across a street;

e. Include required front yards from the R.O.W. on the plan.



TOWN OF KITTEERY, MAINE

TOWN PLANNING DEPARTMENT

200 Rogers Road, Kittery, Maine 03904
 PHONE: (207) 475-1323
 Fax: (207) 439-6806
www.kittery.org

APPLICATION: WETLAND ALTERATION PLAN REVIEW

MITIGATION FEE TO BE DETERMINED BY THE PLANNING BOARD DURING THE REVIEW PROCESS AND PAID WITH PERFORMANCE GUARANTY.	Application Fee Paid: \$ <u>355.00</u> Date: _____ Escrow Fee Paid: \$ _____ Date: _____
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PROPERTY DESCRIPTION	Parcel ID	Map	29	Lot	1	Zone(s): C-2, R-S Base Overlay MS4	Total Land Area 193,524 sq. ft. (4.44 Ac)
Physical Address 41 Route 236, Kittery ME 03904							

PROPERTY OWNER'S INFORMATION	Name	Green Grass LLC	Mailing Address	32 Route 236 Kittery, ME 03904
	Phone	207-252-2332		
	Fax			
	Email	dlapierre67@comcast.net		

APPLICANT'S AGENT INFORMATION	Name	Michael J. Sudak	Name of Business	Attar Engineering, LLC
	Phone	207-439-6023	Mailing Address	1284 State Road, Eliot ME 03903
	Fax			
	Email	mike@attarengineering.com		

PROJECT DESCRIPTION	Existing parcel and wetlands: The parcel (map 29, lot 1) is 4.44 acre in area. F.W Wetlands are located in the southern and western portion of the lot. The lot was previously filled and all development will occur in this area.	
	Project Name	Well Field 44, LLC
	Provide a brief summary of the proposed development, its impact on the existing wetlands and the proposed mitigation plan:	
	The parcel will be improved with a new 517 S.F (footprint) two level retail building and parking and access areas.	
	Two impacts are proposed for access drives totaling 2,212 S.F. 10,414 S.F of filled area is proposed for restoration.	

I certify, to the best of my knowledge, the information provided in this application is true and correct and will not deviate from the plans submitted without notifying the Kittery Planning Department of any changes.

Applicant's Signature:		Owner's Signature:	_____
Date:	<u>6/30/22</u>	Date:	_____

Minimum Application Submission Requirements

15 COPIES OF THIS APPLICATION

1 PDF OF THE SITE PLAN SHOWING GPS COORDINATES

15 COPIES OF THE PLAN – 5 OF WHICH MUST BE 24"X 36"

IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

16.28.500 Submission requirements for a Request to Alter a Wetland.

Unless specifically waived by the planning board, all applications must contain the following information:

A copy of the official documents showing legal interest of the applicant in the property to be affected;

A narrative describing:

- The purpose of the project,
- The type of alteration to the wetland (fill, culvert, dredge, etc.),
- Why there is no practicable alternative to impacting the wetland, and
- How the proposed activity has been designed to minimize the impact on the wetland

The block must contain:

- The name(s) and address(es) of the applicant or owner,
- The name and address of the preparer of the plan, with professional seal, name of plan, date of plan preparation,
- a revision number and date, if applicable,
- map and lot number(s) according to Kittery tax maps shown in the lower right-hand corner in bold lettering and ¼ inches high;

Site plan:

- minimum scale is 1" = 100' indicate the proposed activity
- location and size of all existing and proposed, structures, roads, parking areas, and sewage treatment facilities
- existing and proposed rights-of way, easements and parcels
- 2-foot contours wetland boundaries proposed buffers
- protective measures such as sediment control methods
- proposed boundaries and characteristics of the mitigation site, including elevation, sources of water, and proposed vegetation

Show the location (tied by measurement to identifiable structures or boundary points) of all proposed:

- property boundaries on site wetland boundaries
- offsite wetland areas significantly impacted by the project
- Sq Ft of Wetland areas (onsite area and offsite area, if applicable)
- shorelines flood plains vegetation removal
- drainage structures filling grading dredging,
- include specification for quantity of materials to be added or removed and procedures to be used

Show the direction of natural overland flow in the wetland, and in the proposed alteration area

- 100-year FEMA flood plain boundaries
- number of CY, and type of material to be used as fill
- method of handling, and the location of fill and spoil disposal area, if dredge material is involved
- all owners of property within 150 feet of the proposed alteration together with their mailing addresses and map and lot designations from the assessor's records.
- a vicinity map utilizing a topographic map at a scale no smaller than one inch equals 600 feet showing the boundary of the proposed activity;

Submit:

- one set of photographs, taken during the growing season if possible, showing the wetland, adjacent water bodies if applicable, and the alteration area before development begins.

Drainage:

- Submit a hydrologic analysis in accordance with the requirements of Article IX of Chapter 16.32

Wetlands mitigation plan and report. A wetlands mitigation plan and report is required for activities which, in total, affect or fill more than 500 square feet of wetlands. Wetland Mitigation Plan And Report must contain the following:

- a plan at a scale of 1" = 100' with 2-foot contour intervals, existing wetland boundaries, the area of wetland to be altered, project dimensions and all offsite wetlands, being extensions of the wetland to be altered
- existing wetland characteristics including water depth, vegetation and fauna
- a functional Assessment conducted and prepared by a qualified wetlands scientist or a Maine Certified Soils Scientists

Maintenance Agreement:

- The agreement must be approved by the board and recorded in the York County Registry of deeds and must meet, or exceed, the criteria listed in subsection 16.28.500.C.3. parts d through i.

Conservation Easement:

- (for projects involving preservation of wetlands or adjacent uplands) a conservation easement must be conveyed or deed restriction imposed so that the parcel will remain undeveloped in perpetuity.

Material not submitted in accordance with the above MUST acquire planning board approval of a Request for Waiver of the material per Section 16.28.180.

Other materials the board may require are:

- cross-section drawings showing the nature of the construction, the depth of excavation or height of fill, if applicable, and surface water and groundwater elevations

The board may require a **narrative** describing:

- the specific goals in terms of particular wetland functions and values. These goals must be related to those of the original wetland;
- the available literature or experience to date (if any) for carrying out the mitigation work;
- the proposed implementation and management procedures for the wetlands work;
- the short-term and long-term sources of water for this wetland, including the water quality of these sources;
- plans for re-planting, including a description of plant species, sizes and sources of plant material, as well as how, when and where seeding or planting will take place;
- plans for monitoring the wetlands work, showing capability for mid-course corrections
- plans, if applicable, for control of non-indigenous plant species.
- wetlands work involving creation, restoration and or enhancement of degraded wetlands,

Section 16.28.440-E. Abutter Notice. Owners of property within one hundred and fifty (150) feet, horizontal distance, of the proposed alteration must be notified by first class U.S. mail of any public hearing on the Request for Wetland Alteration.

The applicant must provide 2 sets of mailing labels with the submission of this request.

APPLICATION SUBMITTALS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE FORWARDED TO THE PLANNING BOARD.



ATTAR

ENGINEERING, INC

CIVIL STRUCTURAL MARINE

Adam Causey, Director of Planning and Development
Town of Kittery
P.O. Box 808
Kittery, Maine 03904

June 30, 2022
Project No.: C277-22

**Re: 41 Route 236
Adult-Use Marijuana Retail
Tax Map 29 Lot 1
Wetland Alteration**

Dear Mr. Causey:

On behalf of the applicant, Well Field 44 LLC, I offer the following in reference to the Application for Wetland Alteration.

Project Purpose – the project's purpose to re-develop an existing filled site supporting a boat storage yard to a small (517 S.F. footprint) retail store. The parcel was filled in the early 2000's. As part of the site improvements, two wetland impacts are proposed adjacent to Route 236. One area (845 S.F.) consists of widening the existing drive which connects to an adjacent parcel to the south. The second impact area (1,367 S.F.) is for a new proposed access to Route 236. Both impacts are adjacent to highly developed areas. Total impact areas are 2,212 S.F. Site improvements also include the removal of 10,500 S.F. of wetland fill and restoration of the wetland in this area.

Functional Assessment – required by Kittery's Land Use Ordinance; I accomplished a Functional Assessment using the Highway Methodology Workbook Supplement developed by the U.S. Army Corps of Engineers. As noted, the wetland is adjacent to several highly developed areas; primary wetland functions are Groundwater Recharge, Flood-flow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Production Export and Wildlife Habitat. All of these functions will be improved by the net increase in wetland area, as the area of the removal of the existing fill is greater than the proposed impact (filled) areas by a ratio of 4:7 to 1. Additionally, because the lot was already developed, wildlife habit will not be affected or displaced by the proposed development.

Please contact me for any additional information

Sincerely,














Kenneth A. Wood, P.E.
President

cc: Well Field 44, LLC

Wetland Function – Value Evaluation Form: 41 Route 236, Kittery ME

	File number: C277-22
	Wetland identifier: See below
	Latitude: _____ Longitude: _____
	Preparer(s): ATTAR Engineering, Inc.
Applies to wetland impact areas for access drive for single-family residential dwelling.	
Date: June 30, 2022	

Wetland Description: Forested & Scrub/Shrub

Function/Value	Capability		Summary	Principal Yes/No
	Y	N		
 Groundwater Recharge/Discharge	X		A high groundwater table and topography contributes to the storage and eventually discharge of precipitation.	N
 Floodwater Alteration	X		This area retains floodwater or precipitation that could contribute to flooding on Goodwin Rd and adjacent parcels and also has a clear hydrologic flow connection to a larger drainage system to the south.	Y
 Fish and Shellfish Habitat		X	The wetlands do not have the requisite hydrology, namely a deeply and prolonged inundation regime.	
 Sediment/Toxicant Retention	X		Some surface water is received from the wetland but there are no sources of sediments and toxicants.	N
 Nutrient Removal	X		Some surface water is received from the wetland but there are no sources of nutrients that could otherwise enter the wetlands.	N
 Production Export	X		Vegetation growth and decomposition contributes to nutrient cycling and the food chain. For example, herbivores such as white-tailed deer and white-footed mice consume vegetation, while coyotes consume rodents, deer, and carrion.	N
 Sediment/Shoreline Stabilization		X	This function applies to lakes, rivers, and large water bodies with banks and edges that can erode from natural processes.	
 Wildlife Habitat	X		These wetlands provide habitat to wildlife species that do not need specific wetland communities and wetland dependent species are not expected to utilize the habitat.	N
 Recreation		X	Recreational opportunities are not provided by these wetlands as there is no public access.	
 Education/Scientific Value		X	Educational opportunities are not provided by these wetlands as they are on private lands without public access.	
 Uniqueness/Heritage		X	The wetlands are forested and also contain some regenerating by shrub and sapling vegetation, they are not unique and do not provide heritage benefits.	
 Visual Quality/Aesthetics		X	These wetlands are on private land and do not provide a viewscape for the public and these are not aesthetically pleasing due to their cutover and generating condition.	
 Endangered Species Habitat		X	There is a low potential for rare, threatened, or endangered species and no documented sightings.	
Other				

Notes:

Darren Lapierre
32 Route 236
Kittery, ME 03904

June 30th, 2022

Maine Department of Environmental Protection
312 Canco Road
Portland, ME 04103

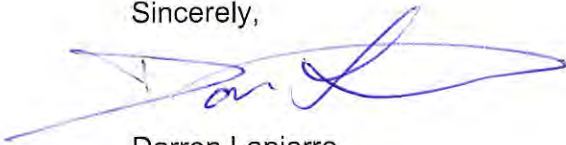
Town of Kittery
200 Rogers Road
Kittery, ME 03904

Dear Department and Town Staff,

Please be informed that Kenneth Wood, P.E., Michael Sudak, E.I.T and / or other staff of Attar Engineering, Inc. will be acting as my agents for the applications and permitting of my project on 41 Route 236, Kittery Maine.

Please contact me if I can provide any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Darren Lapierre', with a long horizontal flourish extending to the left.

Darren Lapierre



150 foot Abutters List Report

Kittery, ME
June 29, 2022

Subject Property:

Parcel Number: 29-1
CAMA Number: 29-1
Property Address: 41 ROUTE 236

Mailing Address: GREEN GRASS LLC
32 ROUTE 236 UNIT 1
KITTERY, ME 03904

Abutters:

Parcel Number: 12-3-1
CAMA Number: 12-3-1
Property Address: 98 DENNETT ROAD

Mailing Address: 98 DENNETT ROAD LLC
12 ROSEBERRY LANE
KITTERY, ME 03904

Parcel Number: 20-14
CAMA Number: 20-14
Property Address: 31 ROUTE 236

Mailing Address: DUMAS, ARTHUR P DUMAS,
MARGARET A
31 ROUTE 236
KITTERY, ME 03904-5528

Parcel Number: 20-14A
CAMA Number: 20-14A
Property Address: 29 ROUTE 236

Mailing Address: SEAWARD, KAREN D
29 ROUTE 236
KITTERY, ME 03904-5528

Parcel Number: 20-15
CAMA Number: 20-15
Property Address: 33 ROUTE 236

Mailing Address: ROONEY, SEAN F. FINLEY, NANCY A.
33 ROUTE 236
KITTERY, ME 03904

Parcel Number: 20-17
CAMA Number: 20-17
Property Address: 37 ROUTE 236

Mailing Address: BLACKBIRD BUSINESS SUITES, LLC
32 ROUTE 236
KITTERY, ME 03904

Parcel Number: 20-18
CAMA Number: 20-18
Property Address: 122 MARTIN ROAD

Mailing Address: BURBANK, KAREN C
122 MARTIN ROAD
KITTERY, ME 03904-1013

Parcel Number: 29-2
CAMA Number: 29-2
Property Address: 140 MARTIN ROAD

Mailing Address: CALDWELL, VIOLA F
140 MARTIN ROAD
KITTERY, ME 03904-1013

Parcel Number: 29-3
CAMA Number: 29-3
Property Address: 136 MARTIN ROAD

Mailing Address: ENRIGHT, BONNIE M.
136 MARTIN ROAD
KITTERY, ME 03904

Parcel Number: 29-31
CAMA Number: 29-31
Property Address: 6 MEADOW LANE

Mailing Address: KITTERY LAND TRUST INC
PO BOX 467
KITTERY, ME 03904

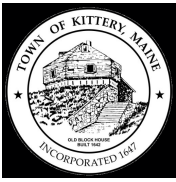
Parcel Number: 29-4
CAMA Number: 29-4
Property Address: 132 MARTIN ROAD

Mailing Address: KING, VINCENT E KING, JESSIE M
132 MARTIN ROAD
KITTERY, ME 03904-1013



www.cai-tech.com

Data shown on this report is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this report.



150 foot Abutters List Report

Kittery, ME
June 29, 2022

Parcel Number: 29-44
CAMA Number: 29-44-1
Property Address: 32 ROUTE 236 #UNIT 1

Mailing Address: LAPIERRE PROPERTIES LLC
32 ROUTE 236
KITTERY, ME 03904-5525

Parcel Number: 29-44
CAMA Number: 29-44-2
Property Address: 32 ROUTE 236 #UNIT 2

Mailing Address: LOBSTER PROPERTIES LLC
32 ROUTE 236 UNIT 2
KITTERY, ME 03904

Parcel Number: 29-5
CAMA Number: 29-5
Property Address: 130 MARTIN ROAD

Mailing Address: JENKINS, JAMES C JENKINS, SUSAN R
C/O CHRISTINE A DOUCETTE 64
NORTON ROAD
KITTERY, ME 03904

Parcel Number: 29-6
CAMA Number: 29-6
Property Address: 124 MARTIN ROAD

Mailing Address: ORLANDO, THOMAS PETTER
HUDDLESTON, KELLIE E.
124 MARTIN ROAD
KITTERY, ME 03904



www.cai-tech.com

Data shown on this report is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this report.

DLN #1002240179600

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS, that LAPIERRE PROPERTIES, LLC, a Maine limited liability company with an address of 32 Route 236, Kittery, County of York, State of Maine, 03904, for no consideration, hereby

Grants to GREEN GRASS, LLC, , a Maine limited liability company with an address of 32 Route 236, Kittery, County of York, State of Maine, 03904, with QUITCLAIM COVENANTS, the following described premises:

41 Route 236, Kittery

A certain lot or parcel of land with any buildings and improvements thereon situated on the Westerly side of Route 236 in the Town of Kittery, County of York, and State of Maine, depicted and identified as "Tax Map 29, Lot 1 193,880 square feet 4.45 acres" on plan entitled "Standard Boundary Survey for Property at 41 Route 236, Kittery, York County, Maine owned by Judy B. Haley and John E. Haley" prepared by Easterly Surveying, Inc. dated May 6, 2008, last revised May 9, 2008, and recorded in the York County Registry of Deeds in Plan Book 329, Page 37, to which reference is hereby made for a more particular description of the property herein conveyed.


This is a non-contractual transfer and is exempt from Maine transfer tax pursuant to MRSA Ch. 36 §4641-C:18.

Meaning and intending to describe and convey the same premises conveyed to Grantor herein by deed of John E. Haley and Judy B. Haley, dated June 12, 2008 and recorded in the York County Registry of Deeds at Book 15438, Page 992.

No Transfer Tax

Dated this 11 day of January, 2022.

LAPIERRE PROPERTIES, LLC

By: 
Darren LaPierre, Member

STATE OF NH
COUNTY OF Rockingham

Personally appeared before me this 11 day of January, 2022, the above named Darren LaPierre, Member of LaPierre Properties, LLC, known to me or satisfactorily proven to be the person who signed the foregoing deed, and acknowledged that he executed same as Member of LaPierre Properties, LLC and as his free and voluntary act.

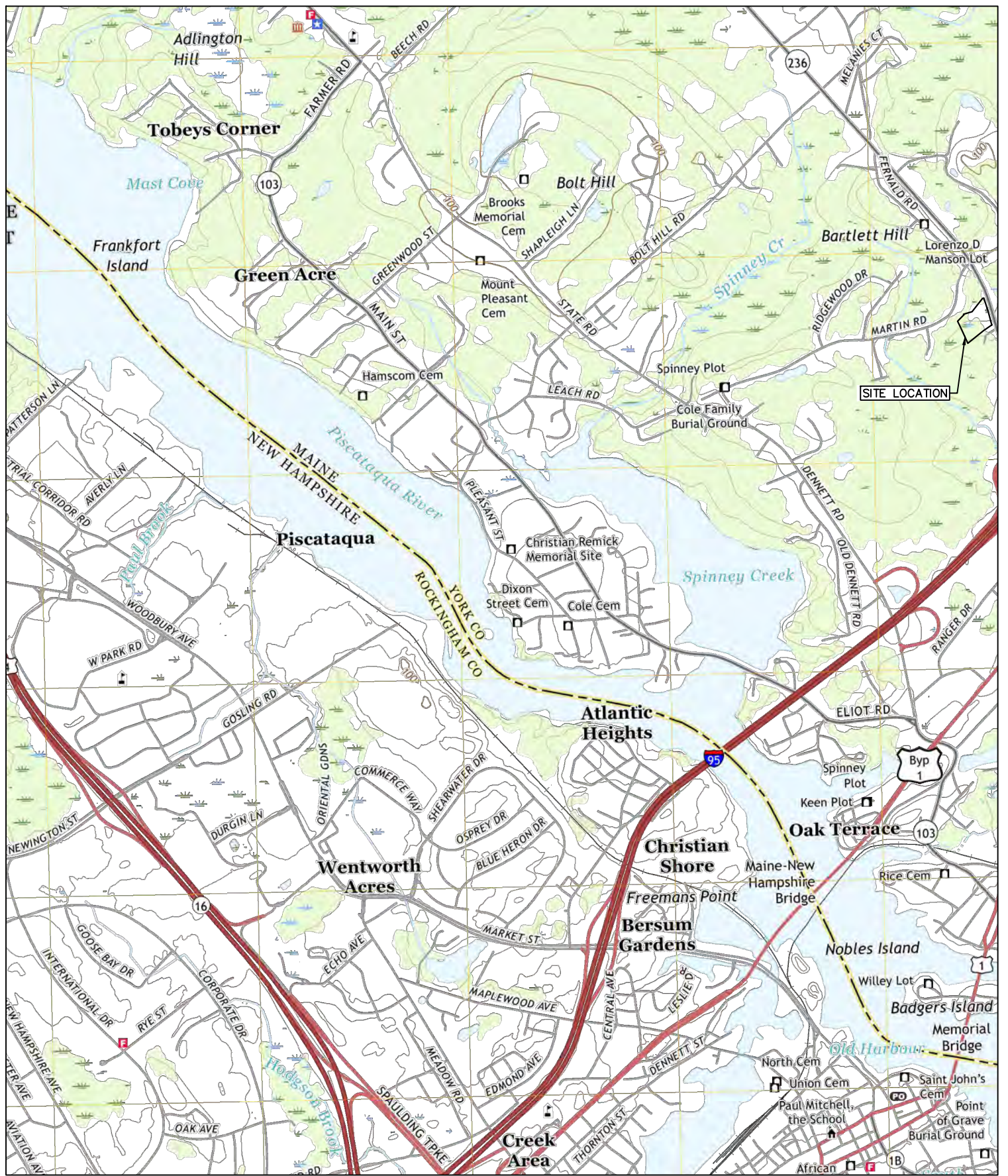




Notary Public

Print Name:

My commission expires:



ATTAR ENGINEERING, INC.
 CIVIL ♦ STRUCTURAL ♦ MARINE ♦ SURVEYING
 1284 STATE ROAD - ELIOT, MAINE 03903
 PHONE: (207)439-6023 FAX: (207)439-2128

LOCATION:
 41 ROUTE 236 (HAROLD L. DOW HIGHWAY)
 KITTERY, ME 03904
 TAX MAP 29, LOT 1

WELL FIELD 44 LLC.
 8 DEXTER LANE, UNIT 8
 KITTERY, MAINE 03904

INFORMATION:
 USGS LOCATION MAP
 7.5 MINUTE SERIES
 PORTSMOUTH QUADRANGLE

SCALE: 1" = 2000'	APPROVED BY:	DRAWN BY: MJS
DATE: 06/30/22		REVISION DATE: - : -
JOB NO: C277-21	FILE: WELL FIELD BASE.DWG	SHEET: 1 OF 1



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
353 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041



JUDITH CAMUSO
COMMISSIONER

Brian Nielsen
Attar Engineering
1284 State Road
Eliot, Maine 03903

Dear Mr. Nielsen,

As you know, we recently visited the 41 Route 236, Kittery property as part of the development review process. The purpose of the visit was to evaluate the site for presence of the State Endangered New England cottontail rabbit and suitable habitat for the species.

During our visit, the ground was mostly covered with snow, and although tracking conditions were not ideal, they were suitable for finding evidence of rabbit presence. However, no rabbit sign was observed. Generally, the habitat in northern and eastern areas of the parcel was in too late of a successional stage (see below for representative photos) and did not have the stem density required for occupation by New England cottontails. However, the southern half of the property is a wetland that has enough cover that cottontails could move through on occasion. As described, the project would not impact this area. Therefore, I do not anticipate a significant impact to New England cottontails from this project.

Please let me know if you have any questions or need additional assistance.

Sincerely,

Cory R. Stearns
Small Mammal Biologist
Maine Department of Inland Fisheries and Wildlife
353 Water Street
Augusta, ME 04030
(207) 592-1782
cory.r.stearns@maine.gov

Map of survey tracks (in red) of the New England cottontail survey at 41 Route 236, Kittery, Maine.



Representative Photos:





JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
353 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041



JUDITH CAMUSO
COMMISSIONER



PHONE: (207) 287-8000

FISH AND WILDLIFE ON THE WEB:
www.maine.gov/ifw

EMAIL ADDRESS:
ifw.webmaster@maine.gov



TOWN OF KITTERY, MAINE

SEWER DEPARTMENT

200 Rogers Road, Kittery, ME 03904

Telephone: (207) 439-4646 Fax: (207) 439-2799

Brian Nielsen
41 Route 236,
Kittery, ME 03904

November 9, 2021

RE:Sewer Availability

Brian,

This letter is to confirm that there is sanitary sewer service available for your project Located at 41 Route 236, the sewer system (piping and pumping stations) and the treatment facility has the capacity and ability to handle the increased flow.

If you have further questions or concerns, please contact me.

Sincerely Yours

Timothy Babkirk

Timothy Babkirk
Superintendent of Sewer Services
Town of Kittery
200 Rogers Rd
Kittery ME 03904
1-207-439-4646
tbabkirk@kitteryme.org

John C. Perry, President
James E. Golter, Treasurer
Julia H. O'Connell, Secretary

Robert A. Gray, Trustee
Julia H. Pelkey, Trustee
Michael S. Rogers, Superintendent

OFFICE OF
KITTERY WATER DISTRICT

17 State Road
Kittery, ME 03904-1565
TEL: 207-439-1128
FAX: 207-439-8549
E-Mail: kitterywater@comcast.net

Kittery Planning Board
200 Rogers Road
Kittery, ME 03904

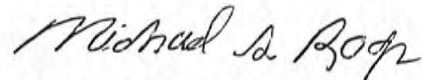
November 9, 2021

Re: Proposed Building – 41 Route 236, Kittery

Dear Planning Board Members,

Please accept this letter as verification that the Kittery Water District does have the capacity to supply municipal water service to the proposed building to be located at 41 Route 236, Kittery.

Sincerely,



Michael S. Rogers
Superintendent

cc: Brian Nielsen, Attar Engineering

April 24, 2022

From: Darren LaPierre
LaPierre Properties LLC | 32 Route 236 | Kittery | ME | 03904

To: Brandon Pollock
Well Field 44 LLC | 41 Route 236 | Kittery | ME | 03904

Dear Mr. Pollock,

Should the parking lot for your business, Well Field 44, located at 41 Route 236, be at capacity, you have my permission to use the parking lot at my adjacent property located at 37 Route 236 Kittery, ME 03904 for overflow parking. Your employees and customers may park an additional twelve vehicles here during regular business hours as needed.

Sincerely,



Darren LaPierre

April 8, 2022

Mr. Brian Nielsen
 Attar Engineering, Inc.
 1284 State Road
 Eliot, Maine 03903

RE: PROPOSED MARIJUANA SALES SHOP – 41 ROUTE 236

As requested, this memorandum is written to document the revised trip generation analysis for a proposed marijuana sales shop at 41 Route 236 in Kittery, Maine. Sewall performed a full traffic impact analysis study for the originally proposed 3,150 square foot (S.F.) building, dated 12/29/2021. It is understood that the proposed building is being reduced in size from 3,150 S.F. to 925 S.F. The revised trip generation analysis is as follows:

TRIP GENERATION

The number of trips to be generated by the reduced marijuana sales shop was estimated utilizing the latest Institute of Transportation Engineers (ITE) “Trip Generation, 11th edition”, which is the same approach used for the original traffic impact study. Land use code (LUC) 882 – Marijuana Dispensary was utilized on the basis of 925 gross S.F. The results are summarized as follows:

<u>Time Period</u>	ITE TRIP GENERATION <u>One-Way Trip-Ends</u>
Weekday	196
AM Peak Hour – Adjacent Street	10
Entering	5
Exiting	5
AM Peak Hour – Generator	15
Entering	8
Exiting	7

<u>Time Period</u>	<u>One-Way Trip-Ends</u>
PM Peak Hour – Adjacent Street	18
Entering	9
Exiting	9
PM Peak Hour – Generator	23
Entering	11
Exiting	12
Saturday Peak Hour - Generator	27
Entering	13
Exiting	14

As seen above, the reduced shop is expected to generate from 10 to 27 one-way trips in peak hours based upon the ITE data. The smaller shop is expected to generate 196 one-way or 98 round-trips daily. This is a significant reduction from the previously proposed facility, which would have generated from 33 to 91 trips in peak hours and 666 trips on a daily basis.

As always, please do not hesitate to contact Sewall if you or the Town of Kittery have any questions or require any additional information or analysis regarding reduced impacts.



Sincerely,



Diane W. Morabito, P.E. PTOE
Vice President Traffic Engineering

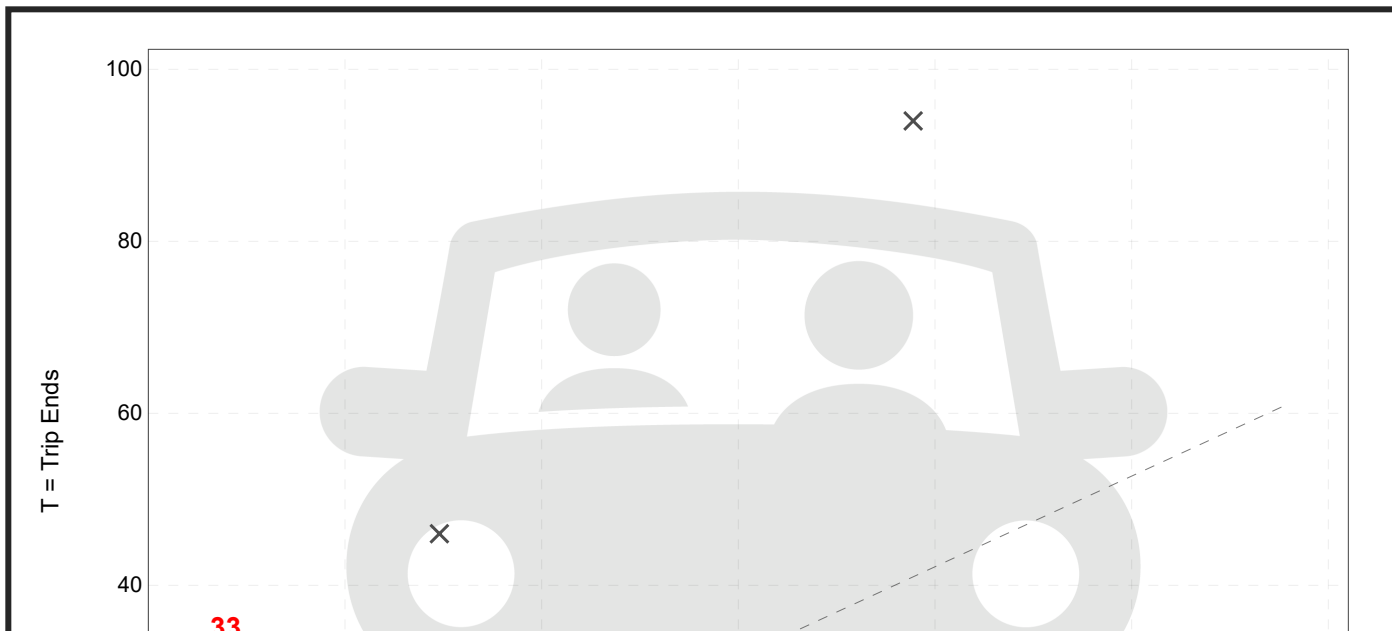
Marijuana Dispensary (882)

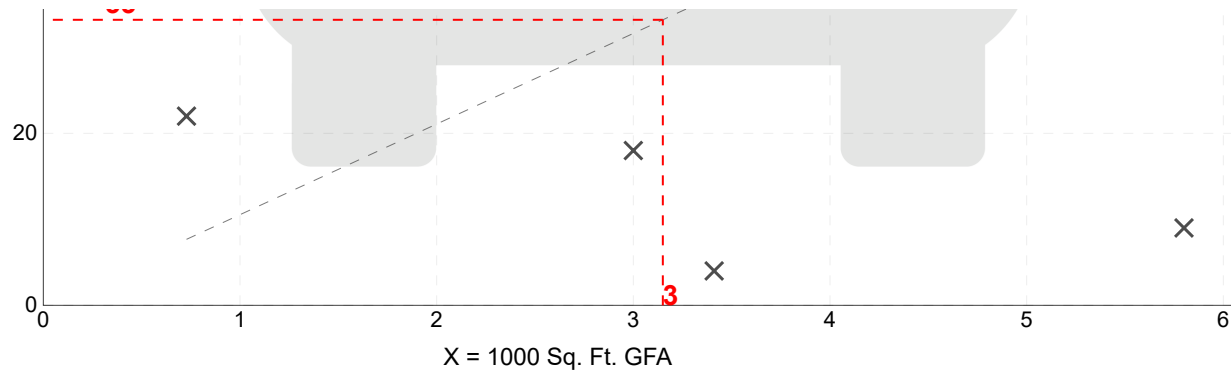
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.54	1.17 - 31.08	12.69

Data Plot and Equation





× Study Site

Fitted Curve Equation: Not Given

- - - - Average Rate

R²= ****

Marijuana Dispensary (882)

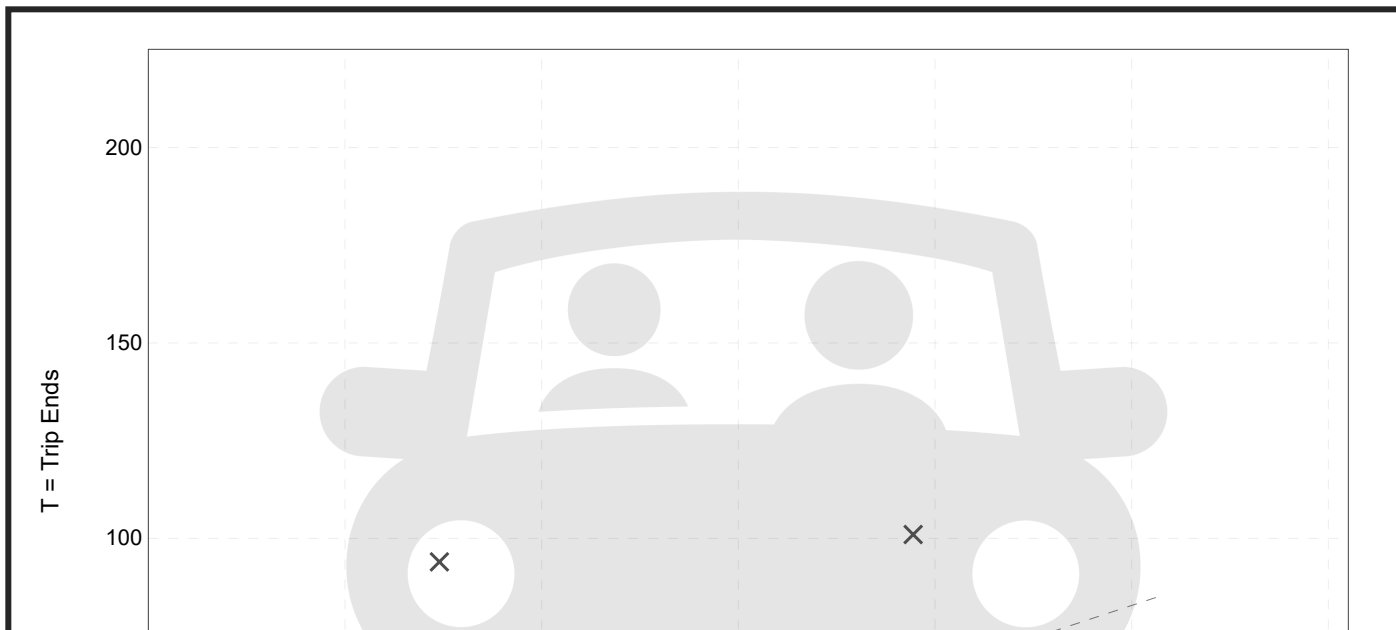
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
AM Peak Hour of Generator

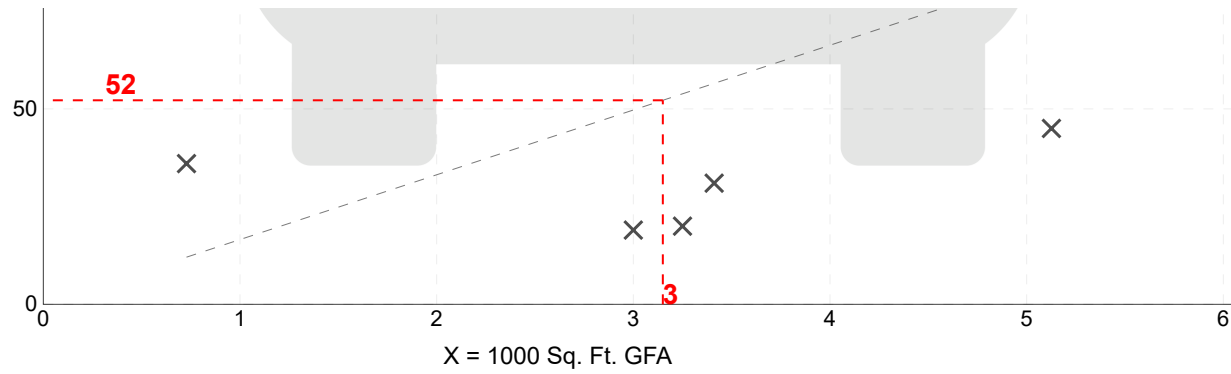
Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
16.57	6.15 - 63.51	17.63

Data Plot and Equation





× Study Site

- - - - Average Rate

Fitted Curve Equation: Not Given

R²= ****

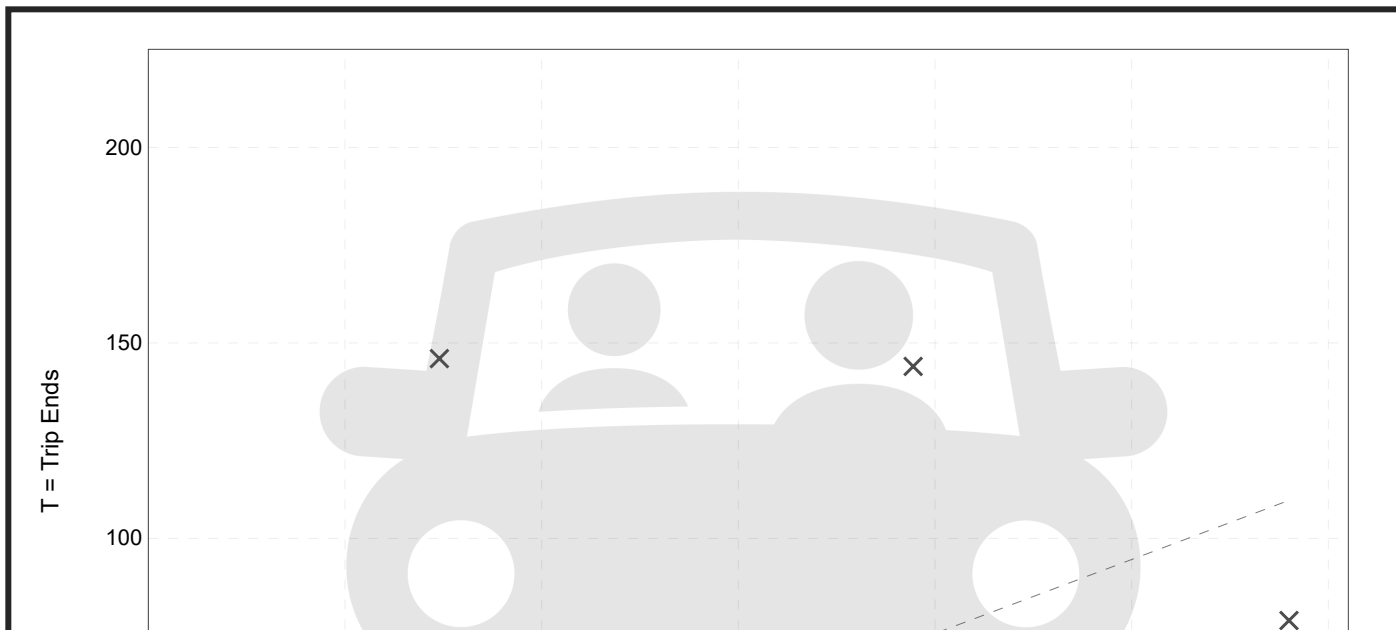
Marijuana Dispensary (882)

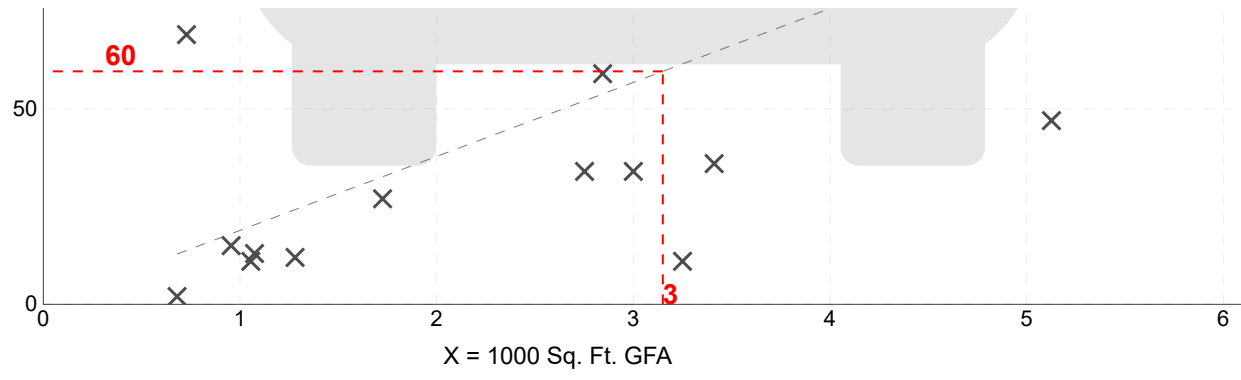
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
**Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.**
Setting/Location: General Urban/Suburban
Number of Studies: 16
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
18.92	2.94 - 98.65	21.73

Data Plot and Equation





× Study Site

- - - - Average Rate

Fitted Curve Equation: Not Given

R²= ****

Marijuana Dispensary (882)

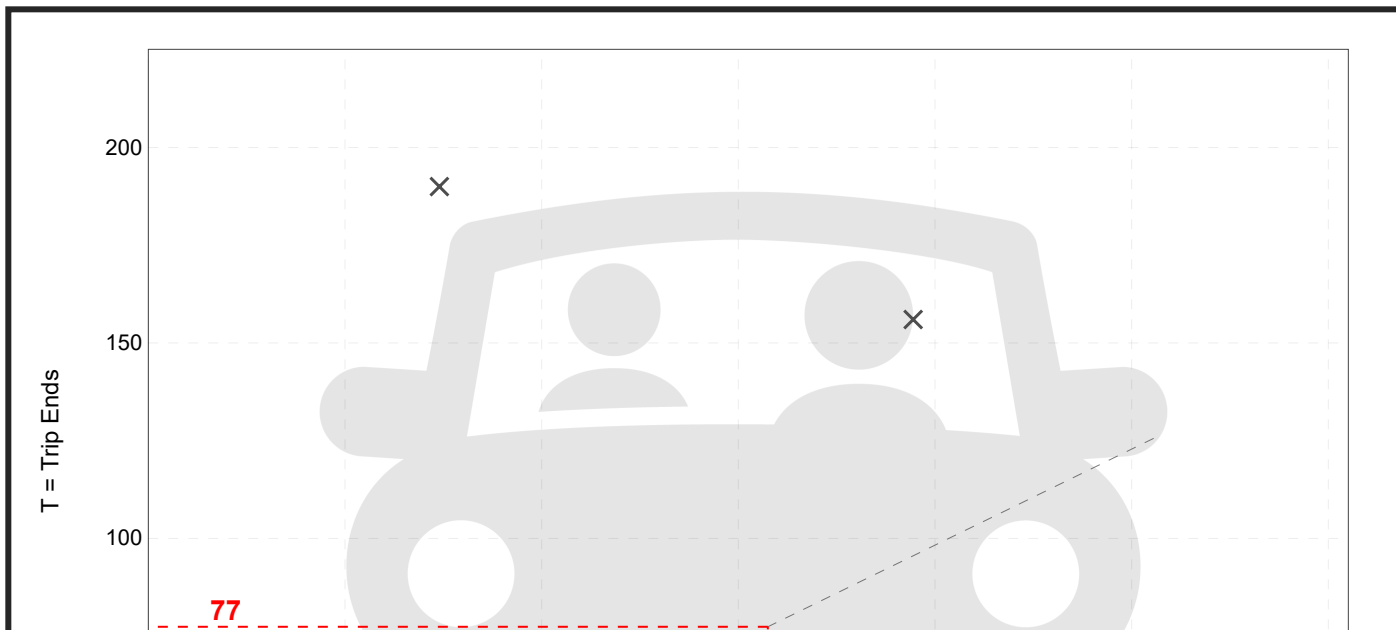
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
PM Peak Hour of Generator

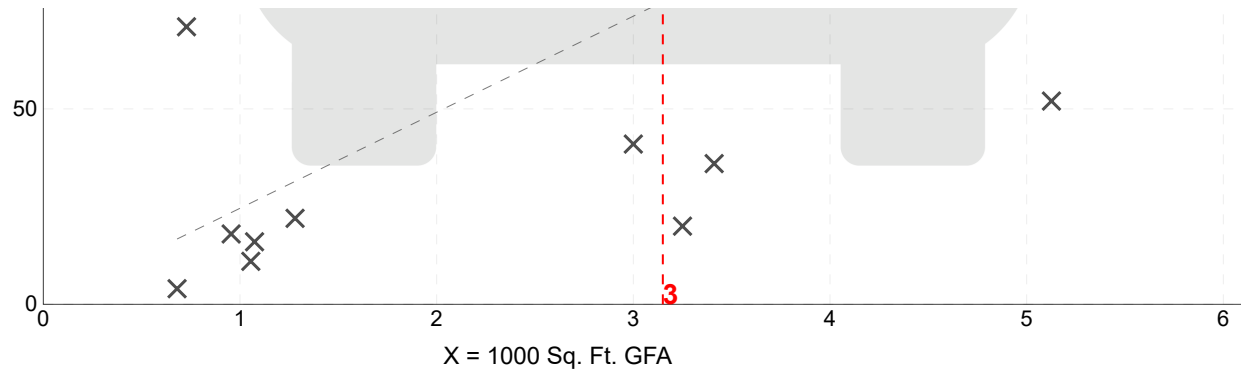
Setting/Location: General Urban/Suburban
Number of Studies: 12
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
24.57	5.88 - 128.38	32.18

Data Plot and Equation





× Study Site

Fitted Curve Equation: Not Given

- - - - Average Rate

R²= ****

Marijuana Dispensary (882)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

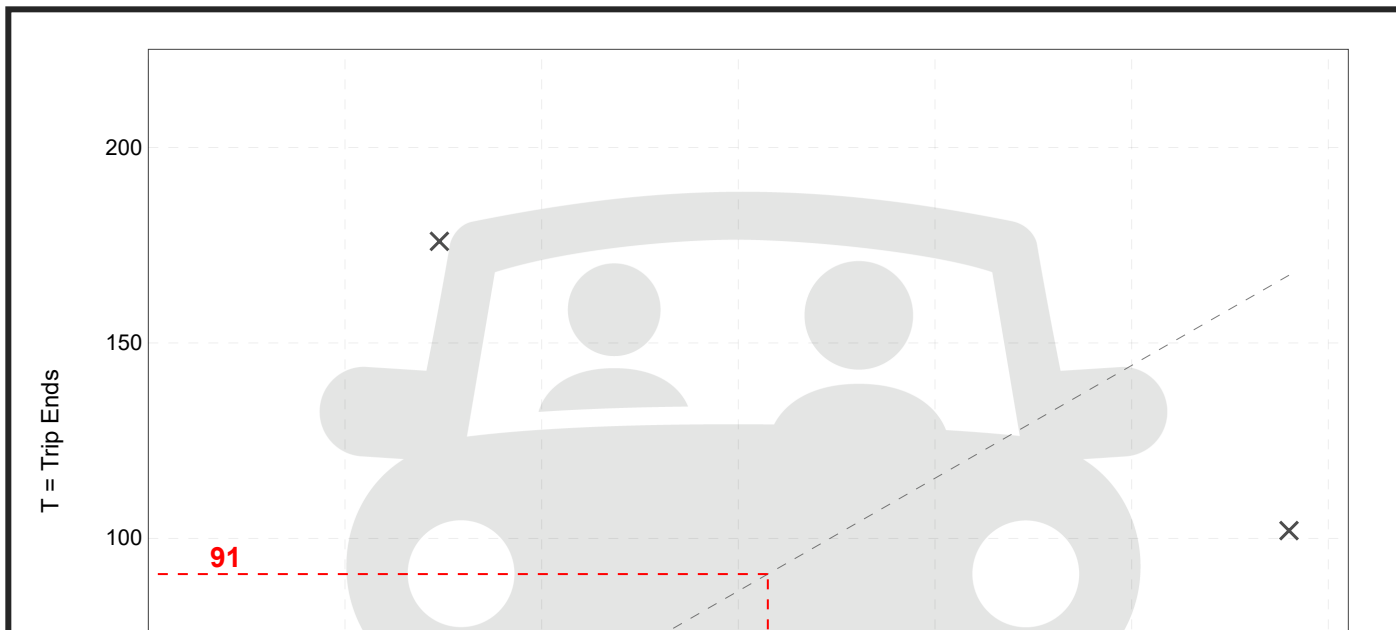
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

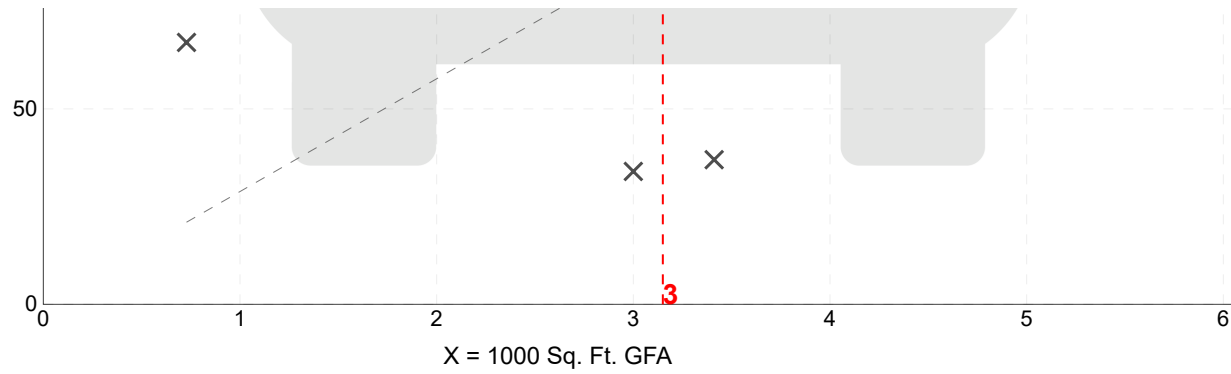
Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
28.85	10.85 - 118.92	39.14

Data Plot and Equation

Caution – Small Sample Size





× Study Site

- - - - Average Rate

Fitted Curve Equation: Not Given

R²= ****



Janet Mills
GOVERNOR

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
REGION 1
P.O. BOX 358
SCARBOROUGH, MAINE 04070-0358

Bruce A. Van Note
COMMISSIONER

February 10, 2022

Sewall
Attn: Diane W. Morabito, P.E., PTOE
40 Forest Falls Drive, Suite 2
Yarmouth, Maine 04096

RE: Proposed Marijuana Sales Shop at 41 Route 236
Kittery, ME

Dear Diane,

Based upon the information submitted on December 13, 2021 and February 10, 2022, the MaineDOT concurs that the proposed marijuana sales shop at 41 Route 236 in Kittery does not require a Traffic Movement Permit (TMP). Since the combined development that has occurred, during the most recent 10-year period, and the proposed future development does not anticipate resulting in an increase in peak hour trip generation of more than 99 trip ends, the proposed development will not exceed the threshold for a TMP, as defined in State Statute.

Any future development shall include analysis of the anticipated increase in peak hour trip generation of the development that has occurred, during the most recent 10-year period, in addition to the anticipated increase in peak hour trip generation of the future developments. If the combined anticipated increase in peak hour trip generation of the existing developments, during the most recent 10-year period, and anticipated future developments exceeds 99 trip ends, a TMP is required.

If you have any questions or wish to discuss this in more detail, please do not hesitate to contact me.

Sincerely,

Randy Illian, P.E.
Region 1 Traffic Engineer

Cc: Steve Landry, State Traffic Engineer
file

**TRAFFIC IMPACT STUDY
41 ROUTE 236
KITTERY, MAINE**

December 29, 2021

Prepared for:

**Well Field 44, LLC.
8 Dexter Lane, Suite 8
Kittery, ME 03904**



Diane W. Morabito



Sewall
The evolution of expertise

A **TFIC** Company

INTRODUCTION

The purpose of this report is to summarize a traffic impact study performed by James W. Sewall Company (Sewall) for a proposed marijuana retail sales shop to be located at 41 Route 236 in Kittery, Maine. The site location is shown on the map in Figure 1. The gross square footage (S.F.) of the proposed building is 3,150. Access to the site will be provided by a new full-movement drive to Route 236.

This report details the traffic analysis which determines the expected number of trips to be generated by the marijuana sales facility and any off-site impacts on level of service or safety for the local Town of Kittery approval process.

It is understood that the shop is expected to be constructed in 2022 and be opened by the end of 2022. Hence, 2023 was utilized as the study year, to allow for full occupancy, for traffic analysis purposes.

TRIP GENERATION ANALYSIS

The number of trips to be generated by the proposed marijuana sales facility was estimated utilizing the latest Institute of Transportation Engineers (ITE) "Trip Generation, 11th edition". Land use code (LUC) 882 – Marijuana Dispensary was utilized on the basis of 3,150 gross S.F. The results are summarized below:

<u>Time Period</u>	ITE TRIP GENERATION <u>One-Way Trip-Ends</u>
Weekday	666
AM Peak Hour – Adjacent Street	33
Entering	17
Exiting	16
AM Peak Hour – Generator	52
Entering	28
Exiting	24
PM Peak Hour – Adjacent Street	60
Entering	30
Exiting	30

<u>Time Period</u>	<u>One-Way Trip-Ends</u>
PM Peak Hour – Generator	77
Entering	38
Exiting	39
Saturday Peak Hour - Generator	91
Entering	46
Exiting	45

The preceding results show that the proposed marijuana shop is expected to generate from 33 to 91 one-way trips in peak hours. The highest peak hour trip generation will occur during the weekday PM and Saturday peak hour periods, typical of retail establishments. Hence, these were selected as the analysis periods for the study.

In terms of state traffic permitting, any previous development on the lot, or adjacent lots under common ownership, within the past ten years must also be considered. The proposed building is being developed on a site that was previously developed with the Pine Brook Business Suites. It is understood that this existing building is 7,292 S.F. and is currently fully occupied with the following uses:

- 6,342 S.F. General Offices
- 300 S.F. Doctor Office
- One Residential Apartment

The trips for Pine Brook Business Suites were estimated using the following ITE land use codes on the noted bases:

- LUC 710 - General Offices – 6,342 S.F.
- LUC 720 – Medical-Dental Office - 300 S.F.
- LUC 210 – Single Family House – 1 Dwelling Unit

These results are summarized in the following table along with the marijuana sales facility trips:

<u>Time Period</u>	ITE TRIP GENERATION (one-way trip-ends)				
	<u>Retail</u>	<u>Offices</u>	<u>Medical</u>	<u>Apt.</u>	<u>Total</u>
AM Peak Hour – Adjacent Street	33	16	1	1	51
Entering	17	14	1	0	32
Exiting	16	2	0	1	19
AM Peak Hour – Generator	52	16	4	1	73
Entering	28	14	2	0	44
Exiting	24	2	2	1	29
PM Peak Hour – Adjacent Street	60	17	1	1	79
Entering	30	3	0	1	34
Exiting	30	14	1	0	45
PM Peak Hour – Generator	77	17	1	1	96
Entering	38	3	0	1	42
Exiting	39	14	1	0	54
Saturday Peak Hour - Generator	91	3	1	1	96
Entering	46	2	1	1	50
Exiting	45	1	0	0	46

As seen above, the proposed marijuana sales shop, when combined with the adjacent Pine Brook Business Suites, is projected to generate a maximum of 96 one-way trips in peak hours. Since the 100-trip threshold is not met a traffic movement permit (TMP) should not be required by MaineDOT. However, given that the results are close to the threshold this information has been provided to MaineDOT in a letter for confirmation that a TMP is not required.

TRAFFIC VOLUMES

Turning movement/classification counts were conducted by Sewall during the weekday PM peak hour (3:00 - 6:00) and the Saturday peak hour (11:00 – 2:00) periods at the signalized intersection of Route 236, Martin Road and Stevenson Road to determine existing volumes as outlined below:

<u>Intersection</u>	<u>Count Date</u>	<u>Count Period</u>	<u>Peak Hour</u>
Route 236, Martin and Stevenson Roads	12/9/21	Weekday PM	3:00 – 4:00
Route 236, Martin and Stevenson Roads	12/11/21	Saturday	11:15 – 12:15

The count records are included in the appendix. The counts were factored to 30th highest hour conditions using MaineDOT group mean factors. These volumes typically occur under

peak summer conditions in July and August in Maine. The results are shown in Figure 2. Given that counts were conducted in December the seasonal factoring is quite high (13 %).

A review of the results show that the weekday PM peak hour volumes are significantly higher for all intersection approaches as well as overall. The total weekday PM peak hour volumes are 42 % higher than the Saturday peak hour. As a result, the weekday PM peak hour of the adjacent street was determined to be the analysis period for this study.

Existing average annual daily traffic (AADT) data for the area was obtained from "Traffic Volume Counts, 2019 and 2014 Annual Reports", published by MaineDOT. This data is summarized below:

<u>Location Description</u>	Average Annual Daily Traffic			
	<u>2010</u>	<u>2013</u>	<u>2016</u>	<u>2019</u>
Route 236, southeast of Stevenson Road	18120	18630	17760	17870
Route 236, northwest of Martin Road	17790	18660	17780	17420

As seen above, traffic volumes have generally been declining along this section of Route 236 over the longer-term period 2010 to 2019. To be conservative, a 1/2 % growth rate was used to project the existing 2021 volumes to 2023 conditions.

The Town of Kittery Planner was contacted to determine if there are any other approved (but unbuilt) developments, expected to significantly impact future Route 236 volumes in the area, which should be considered in the traffic analysis. The Planner identified the mixed-use 76 Dennett Road development as a potential project. The Planner provided the Traffic Impact Study, which was prepared by Hoyle, Tanner & Associates Inc. Based upon a review of the trip assignments in the study, this project is not expected to impact Route 236 volumes in this area significantly. Hence, the projected 2023 No Build volumes, allowing for annual traffic growth rate, are shown in Figure 3.

The trip assignments for the retail shop were assigned using the travel patterns recorded during the counts. Based upon ITE data, approximately 34 % of retail trips are pass-by during the PM peak hour period. A lesser 25 % was assumed for this analysis to be conservative. The resulting trip assignments for the PM peak hour of the adjacent street are shown in Figure 4. Based upon the trip assignments the shop is expected to have a minimal impact on off-site traffic operations. Generally, a project won't have an impact on traffic operations unless it generates more than 25 lane hour trips. Based upon the trip assignments, the marijuana sales shop will generate a maximum of 18 lane hours during the PM peak hour analysis period. Given the trip assignments, the study area encompasses the site drive intersection, but it was extended to the nearby intersection of Martin and Stevenson Roads to evaluate off-site impact. Lastly, the projected Build 2022 volumes are shown in Figure 5.

CAPACITY ANALYSIS

Traffic operations are evaluated in terms of level of service (LOS). Level of service is a qualitative measure that describes operations by letter designation. The levels range from A - very little delay to F - extreme delays. Level of service "D" is generally considered acceptable in urban locations while LOS "E" is generally considered the capacity of a facility and the minimum tolerable level. The level of service for signalized intersections is based upon the average control or signal delay per vehicle. These criteria are defined in the following table excerpted from the 2010 "Highway Capacity Manual":

Signalized Intersection Level of Service

<u>LOS</u>	<u>Delay Range</u>
A	< = 10.0 seconds
B	> 10.0 and <= 20.0
C	> 20.0 and <= 35.0
D	> 35.0 and <= 55.0
E	> 55.0 and <= 80.0
F	> 80.0

The level of service for unsignalized intersections is based upon average control delay per vehicle for each minor, opposed movement, as defined in the following table:

Unsignalized Intersection Level of Service

<u>LOS</u>	<u>Delay Range</u>
A	< = 10.0 seconds
B	> 10.0 and <= 15.0
C	> 15.0 and <= 25.0
D	> 25.0 and <= 35.0
E	> 35.0 and <= 50.0
F	> 50.0

SIGNALIZED INTERSECTION ANALYSIS

The level of service (LOS) was determined for the nearby signalized intersection of Stevenson and Martin Road for 2023 No Build and Build conditions using Synchro 11 and SimTraffic (the average of five runs) to evaluate off-site impact. The results are provided in the appendix and are summarized in the following table:

Route 236, Stevenson Road & Martin Road		
PM Peak Hour Level of Service		
<u>Approach/Movement</u>	No Build <u>2023</u>	Build <u>2023</u>
Eastbound Martin Road Lefts/Thrus	D (46.8)	D (42.7)
Eastbound Martin Road Rights	A (7.0)	B (12.9)
Eastbound Martin Road Overall	C (32.7)	C (32.1)
Westbound Stevenson Road Lefts/Thrus	D (46.6)	D (41.8)
Westbound Stevenson Road Rights	C (28.3)	C (21.3)
Westbound Stevenson Road Overall	D (37.4)	C (33.2)
Northbound Route 236 Lefts	D (45.4)	D (48.7)
Northbound Route 236 Thru/Rights	B (16.0)	B (21.9)
Northbound Route 236 Overall	B (16.5)	B (22.3)
Southbound Route 236 Lefts	D (46.5)	D (48.6)
Southbound Route 236 Thru/Rights	A (5.7)	A (7.0)
Southbound Route 236 Overall	A (8.1)	A (9.4)
Intersection Overall	B (14.3)	B (17.8)

As seen above, the signalized intersection is projected to operate at LOS "B" overall in 2023 under both No Build and Build volumes with all lanes at an acceptable LOS "D" or better. The new trips to Route 236 from the proposed shop will have no significant impact on operations or delays at this intersection as expected given the limited off-site volumes.

UN SIGNALIZED INTERSECTION ANALYSIS

Level of service was also calculated for the proposed site drive intersection to assess drive operations and determine the need for any improvements, such as dual exit lanes. The results, based upon the average of five SimTraffic runs, are as follows:

Route 236 & Site Drive	
PM Peak Hour Level of Service	
<u>Approach/Movement</u>	Build <u>2023</u>
Northbound Route 236 Lefts/Throughs	A (3.5)
Southbound Route 236 Throughs/Rights	A (3.1)
Eastbound Site Drive	F (72.0)

As seen in the preceding table, the unsignalized site drive is projected to operate at LOS “F” during the PM peak hour under projected 2023 volumes. Given this result, dual exit lanes are recommended to allow right turners to by-pass vehicles waiting to exit left, thus improving the overall level of service. Given the projected drive volumes, and the HCM queue results as well as the SimTraffic results, and considering wetland impacts, a 25’ long right turn lane is recommended for the site drive. This will decrease overall delays exiting the site and improve the level of service for the exit drive while minimizing wetland impacts.

Additionally, the SimTraffic results show a 95th percentile queue length northbound on Route 236 at the site drive of 180’. In comparison, the HCM results show less than a one vehicle queue. Given the SimTraffic results, consideration should be given to a left-turn lane on Route 236 to store traffic entering the site in peak hours. However, the high seasonal factoring (December to summer), the lack of local marijuana shop data to verify the ITE trip generation rates, the inconsistencies in results based on the two analysis programs and the apparent wetland impacts associated with the construction of a left-turn lane, it is recommended that a post-occupancy monitoring study be performed at the site drive after the shop is fully occupied under peak summer conditions. This study will determine actual volumes generated by the shop, observe queue lengths, and will assess if a left-turn lane is needed on Route 236 to store traffic entering the site. Typically, turn lanes are not required for projects that do not require a Traffic Movement Permit from MaineDOT. If a left-turn lane is warranted on Route 236 then the design will need to go through the MaineDOT developer review and approval process to gain construction authorization.

SAFETY ANALYSIS

ACCIDENT REVIEW

The Maine Department of Transportation uses two criteria to determine high crash locations (HCLs). The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher than expected crash rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must also be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must occur over the three-year study period for the location to be considered a high crash location.

The MaineDOT Map Viewer was reviewed for high crash locations in the vicinity of the site; along Route 236 from the I-95 southbound ramps westerly to the intersection of Hanscom Road. There are no high crash locations along this one plus mile length of Route 236 so no further accident review or evaluation is necessary.

DRIVEWAY SIGHT DISTANCE

One of the most important safety factors to consider for a project is sight distance from the access drives. This sight distance is measured ten feet back from the edge of travel way at a driver's eye height of 3.5 feet to an object height of 4.25 feet. Sewall recommends a minimum sight distance of 400 feet for the 40 mile per hour speed limit on this portion of Route 236. The Town of Kittery's code also requires 400' of sight distance for 40 mph roadways.

Sewall field checked the sight distances from the proposed drive location and found it will exceed 500' to the left and 700' to the right with appropriate driveway grading and guardrail placement. Some larger brush removal may also be required on the roadside banking to the north (left).

Hence, sight distance will be adequate to provide for safe access with appropriate drive and guardrail design. It is important to note that no signage or landscaping should be located in the driveway sight triangle which could obscure or limit the driveway sight distances in the future.

SUMMARY AND RECOMMENDATIONS

The proposed marijuana sales facility is expected to generate between 33 and 91 new one-way trips during peak hours based upon ITE data. Based upon the traffic count results, with consideration of the site's peak hours, the weekday PM peak hour of the adjacent street was selected for the traffic analysis. Also based upon the trip assignments, the study area was defined as extending from the site through the site drive intersection, but it was extended to the nearby intersection of Martin and Stevenson Roads to demonstrate off-site impact.

In terms of capacity, the signalized intersection of Martin and Stevenson Road currently operates at a good level of service "B" during the weekday PM peak hour. Under projected Build volumes the LOS will remain at this level with no capacity concerns.

The site drive is projected to operate at LOS "F" given the lack of gaps in the Route 236 traffic stream. Given this result, a 25' right-turn lane is recommended for the site drive to allow right-turners to by-pass motorists waiting to exit left, thus improving the overall LOS for the drive. Additionally, the two models showed differing results for queue lengths on Route 236 due to entering left turns.

Since the construction of a left -turn lane on Route 236 would impact wetlands on the east side of Route 236 and recognizing that high seasonal factoring (December to summer), the lack of local marijuana shop data to verify the ITE trip generation rates and the inconsistencies in results based on the two analysis programs, Sewall recommends a post-occupancy monitoring study of the drive intersection to assess the need for a left-turn lane on Route 236 to store traffic entering the site. This study should be performed at the site drive after the shop is fully occupied under peak summer conditions. This study will determine actual volumes generated by the shop, observe queue lengths, and assess if a left-turn lane is needed on Route 236 to store traffic entering the site. If a left-turn lane is warranted on Route 236 then the design will need to go through the MaineDOT developer review and approval process to gain construction authorization.

In terms of safety, there are no high crash locations within the vicinity of the site. Sight distance from the access drive will be adequate with proper drive design and some potential brush clearing.



Figure 1

Site Location Map

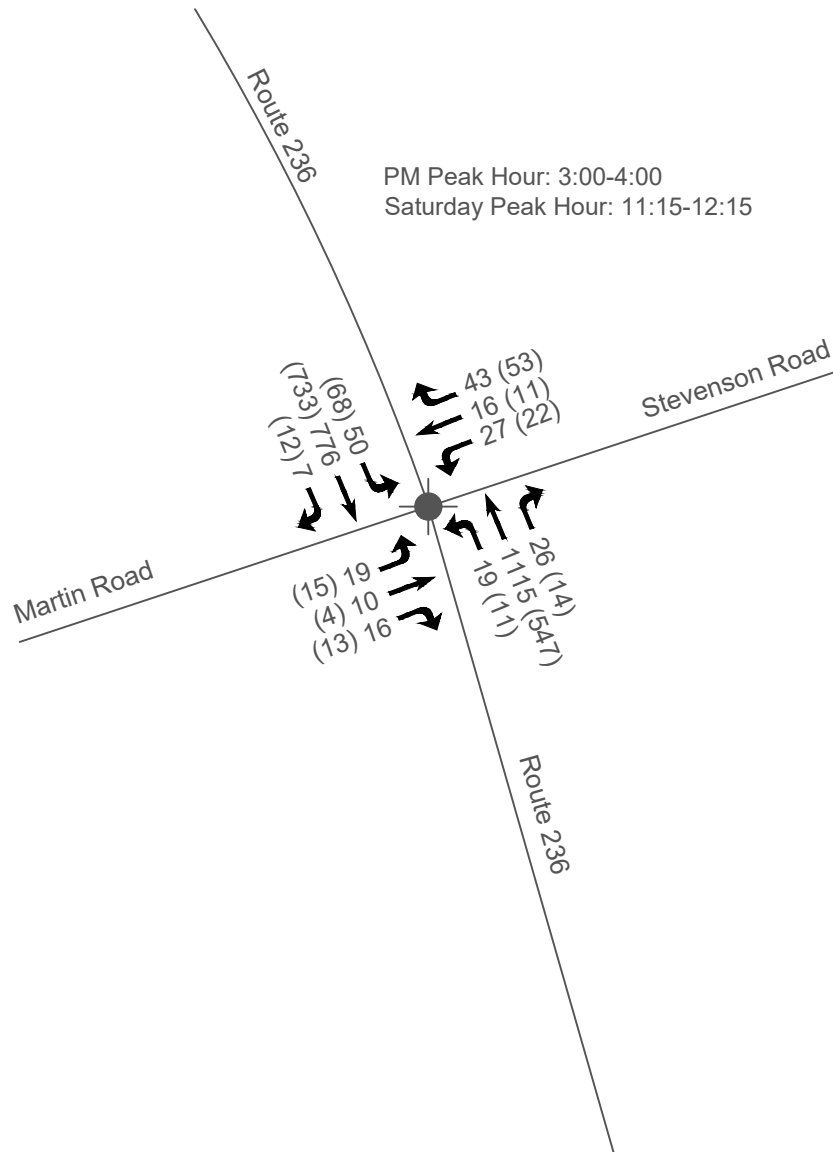
41 Route 236 Marijuana Sales

Kittery, Maine





XX - PM Peak Hour
(XX) - Saturday Peak Hour



Signalized Intersection

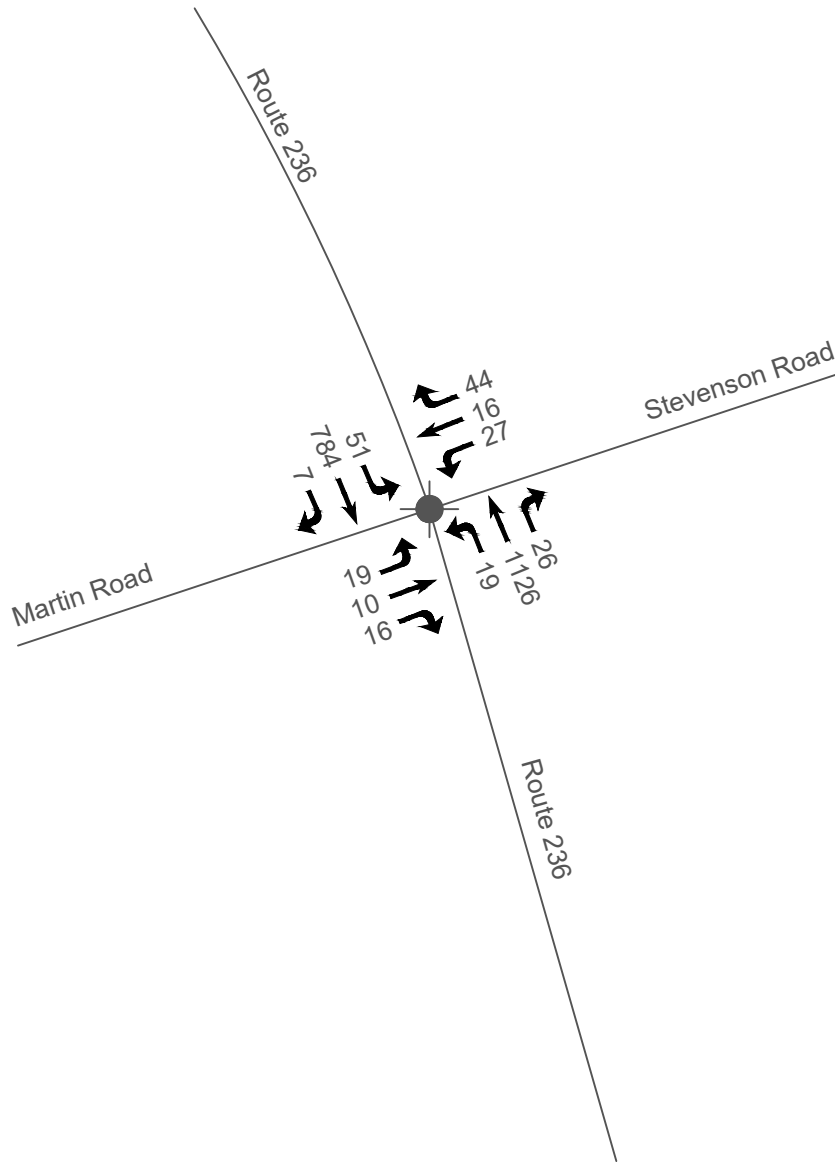


Figure 2

2021 Existing Peak Hour Volumes
41 Route 236 Marijuana Sales
Kittery, Maine



PM Peak Hour: 3:00-4:00



Signalized Intersection



Figure 3

2023 No Build Peak Hour Volumes

41 Route 236 Marijuana Sales

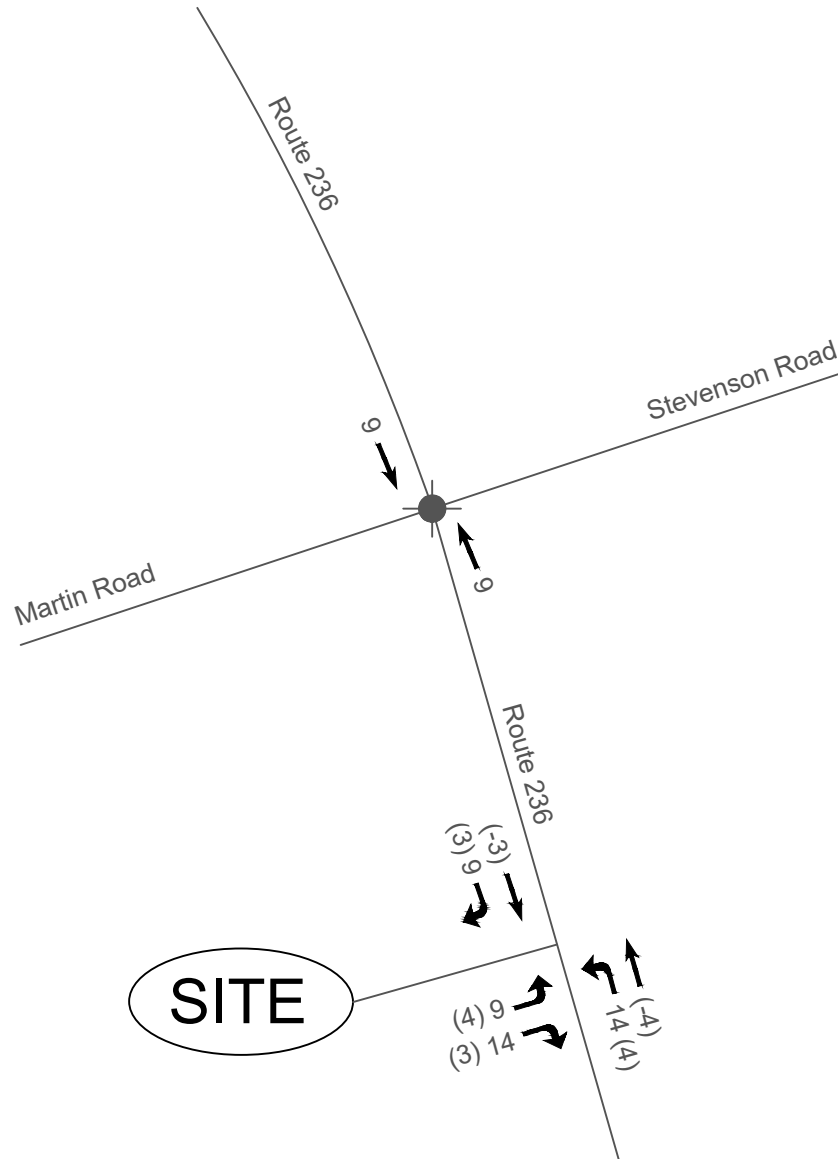
Kittery, Maine





-- Primary Trips: 46
23 In
23 Out

(--) Pass-By Trips: 14
7 In
7 Out



Signalized Intersection

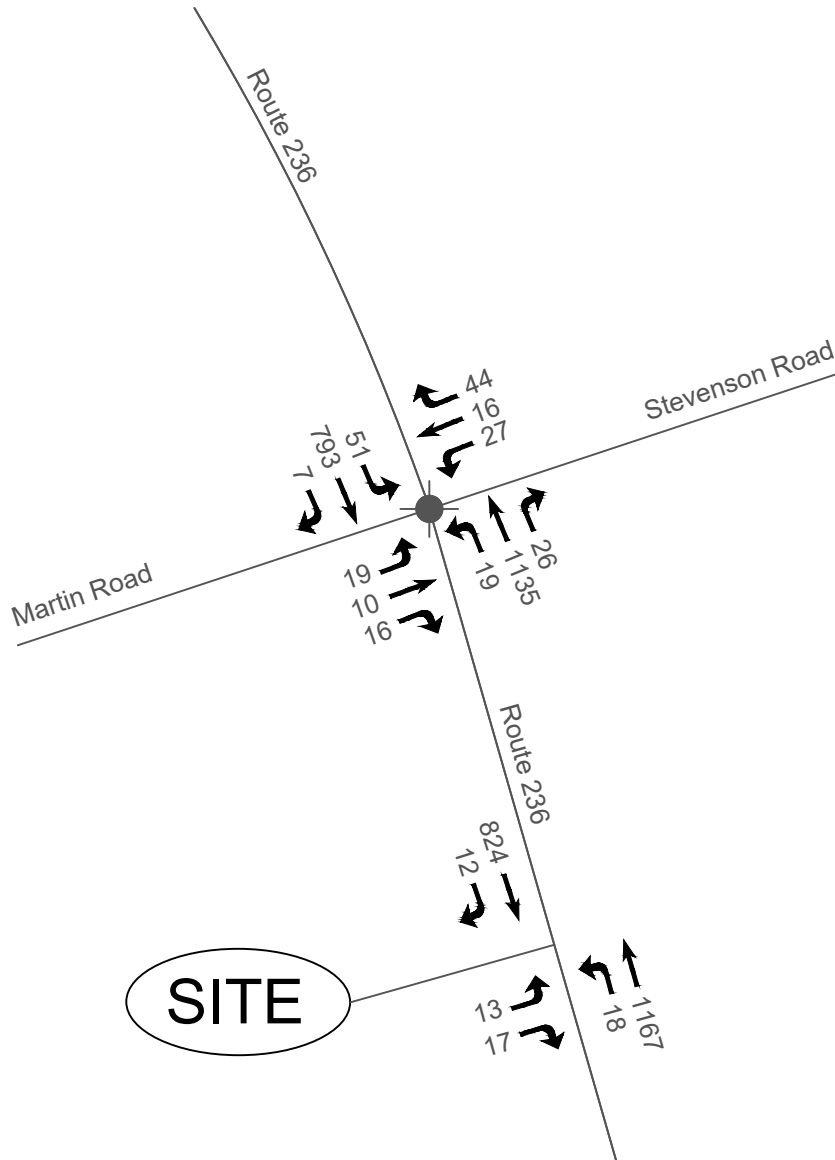


Figure 4

PM Peak Hour Trip Assignments
41 Route 236 Marijuana Sales
Kittery, Maine



PM Peak Hour: 3:00-4:00



Signalized Intersection



Figure 5

2023 Build Peak Hour Volumes

41 Route 236 Marijuana Sales

Kittery, Maine



APPENDIX

Turning Movement Counts

Capacity Analysis

Sewall

40 Forest Falls Drive
Yarmouth, ME 04096

TITLE: Route 236, Martin & Stevenson Rds
TOWN: Kittery
COUNTER: JM
WEATHER: Sun/Clouds

File Name : KitteryRoute236MartinStevenPM2021
Site Code : 00129326
Start Date : 12/9/2021
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

Start Time	Route 236 Southbound					Stevenson Road Westbound					Route 236 Northbound					Martin Road Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
03:00 PM	1	168	9	0	178	16	1	9	0	26	3	240	2	0	245	3	1	2	0	6	455
03:15 PM	0	181	10	0	191	5	3	6	0	14	6	254	2	0	262	3	2	3	0	8	475
03:30 PM	3	171	11	0	185	8	4	2	0	14	6	268	7	0	281	3	3	6	0	12	492
03:45 PM	2	169	14	0	185	9	6	7	0	22	8	228	6	0	242	5	3	6	0	14	463
Total	6	689	44	0	739	38	14	24	0	76	23	990	17	0	1030	14	9	17	0	40	1885
04:00 PM	4	149	10	0	163	18	4	9	0	31	6	219	3	0	228	7	4	3	0	14	436
04:15 PM	3	130	8	0	141	15	3	6	0	24	7	192	3	0	202	1	2	4	0	7	374
04:30 PM	4	143	7	0	154	15	0	10	0	25	6	246	4	0	256	6	2	5	0	13	448
04:45 PM	1	147	9	0	157	7	5	7	0	19	2	172	2	0	176	4	1	4	0	9	361
Total	12	569	34	0	615	55	12	32	0	99	21	829	12	0	862	18	9	16	0	43	1619
05:00 PM	3	124	5	0	132	9	3	0	0	12	3	189	4	0	196	2	2	2	0	6	346
05:15 PM	1	130	10	0	141	13	3	3	0	19	3	211	4	0	218	5	0	1	0	6	384
05:30 PM	1	123	7	0	131	9	1	5	0	15	3	154	7	0	164	3	1	1	0	5	315
05:45 PM	3	109	8	0	120	9	3	18	0	30	3	154	4	0	161	2	2	3	0	7	318
Total	8	486	30	0	524	40	10	26	0	76	12	708	19	0	739	12	5	7	0	24	1363
Grand Total	26	1744	108	0	1878	133	36	82	0	251	56	2527	48	0	2631	44	23	40	0	107	4867
Apprch %	1.4	92.9	5.8	0		53	14.3	32.7	0		2.1	96	1.8	0		41.1	21.5	37.4	0		
Total %	0.5	35.8	2.2	0	38.6	2.7	0.7	1.7	0	5.2	1.2	51.9	1	0	54.1	0.9	0.5	0.8	0	2.2	
Passenger Vehicles	1679										2436										
% Passenger Vehicles	100	96.3	97.2	0	96.4	98.5	94.4	98.8	0	98	98.2	96.4	100	0	96.5	97.7	91.3	95	0	95.3	96.5
Light Trucks																					
% Light Trucks	0	2.6	2.8	0	2.6	0.8	2.8	1.2	0	1.2	1.8	2.2	0	0	2.2	2.3	8.7	5	0	4.7	2.3
Heavy Trucks																					
% Heavy Trucks	0	20	0	0	20	1	1	0	0	2	0	35	0	0	35	0	0	0	0	0	57

Sewall

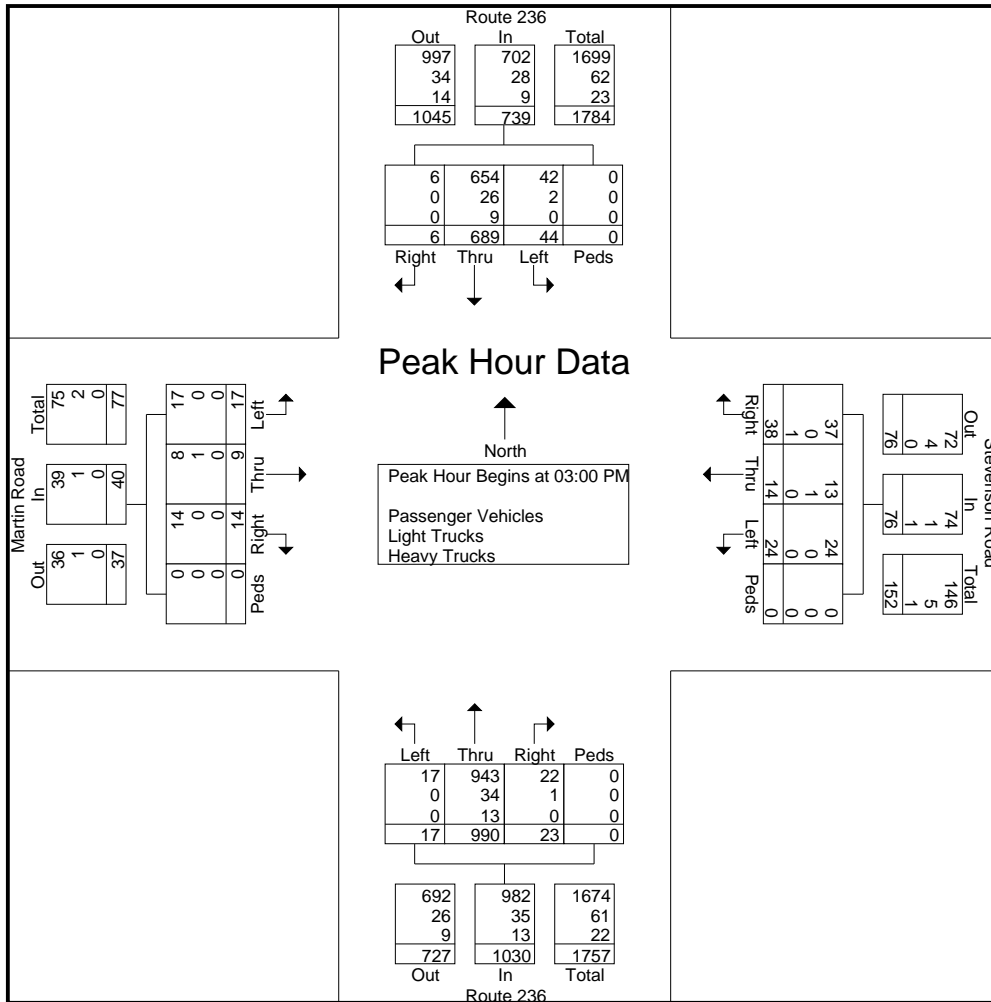
40 Forest Falls Drive
Yarmouth, ME 04096

TITLE: Route 236, Martin & Stevenson Rds
TOWN: Kittery
COUNTER: JM
WEATHER: Sun/Clouds

File Name : KitteryRoute236MartinStevenPM2021
Site Code : 00129326
Start Date : 12/9/2021
Page No : 2

Start Time	Route 236 Southbound					Stevenson Road Westbound					Route 236 Northbound					Martin Road Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	1	168	9	0	178	16	1	9	0	26	3	240	2	0	245	3	1	2	0	6	455
03:15 PM	0	181	10	0	191	5	3	6	0	14	6	254	2	0	262	3	2	3	0	8	475
03:30 PM	3	171	11	0	185	8	4	2	0	14	6	268	7	0	281	3	3	6	0	12	492
03:45 PM	2	169	14	0	185	9	6	7	0	22	8	228	6	0	242	5	3	6	0	14	463
Total Volume	6	689	44	0	739	38	14	24	0	76	23	990	17	0	1030	14	9	17	0	40	1885
% App. Total	0.8	93.2	6	0		50	18.4	31.6	0		2.2	96.1	1.7	0		35	22.5	42.5	0		
PHF	.500	.952	.786	.000	.967	.594	.583	.667	.000	.731	.719	.924	.607	.000	.916	.700	.750	.708	.000	.714	.958
Passenger Vehicles	100	94.9	95.5	0	95.0	97.4	92.9	100	0	97.4	95.7	95.3	100	0	95.3	100	88.9	100	0	97.5	95.3
% Passenger Vehicles																					
Light Trucks	0	3.8	4.5	0	3.8	0	7.1	0	0	1.3	4.3	3.4	0	0	3.4	0	11.1	0	0	2.5	3.4
% Light Trucks																					
Heavy Trucks	0	9	0	0	9	1	0	0	0	1	0	13	0	0	13	0	0	0	0	0	23
% Heavy Trucks	7	776	50			43	16	27			26	1115	19			16	10	19			

Gr. I = 0.98/.87
= 1.126



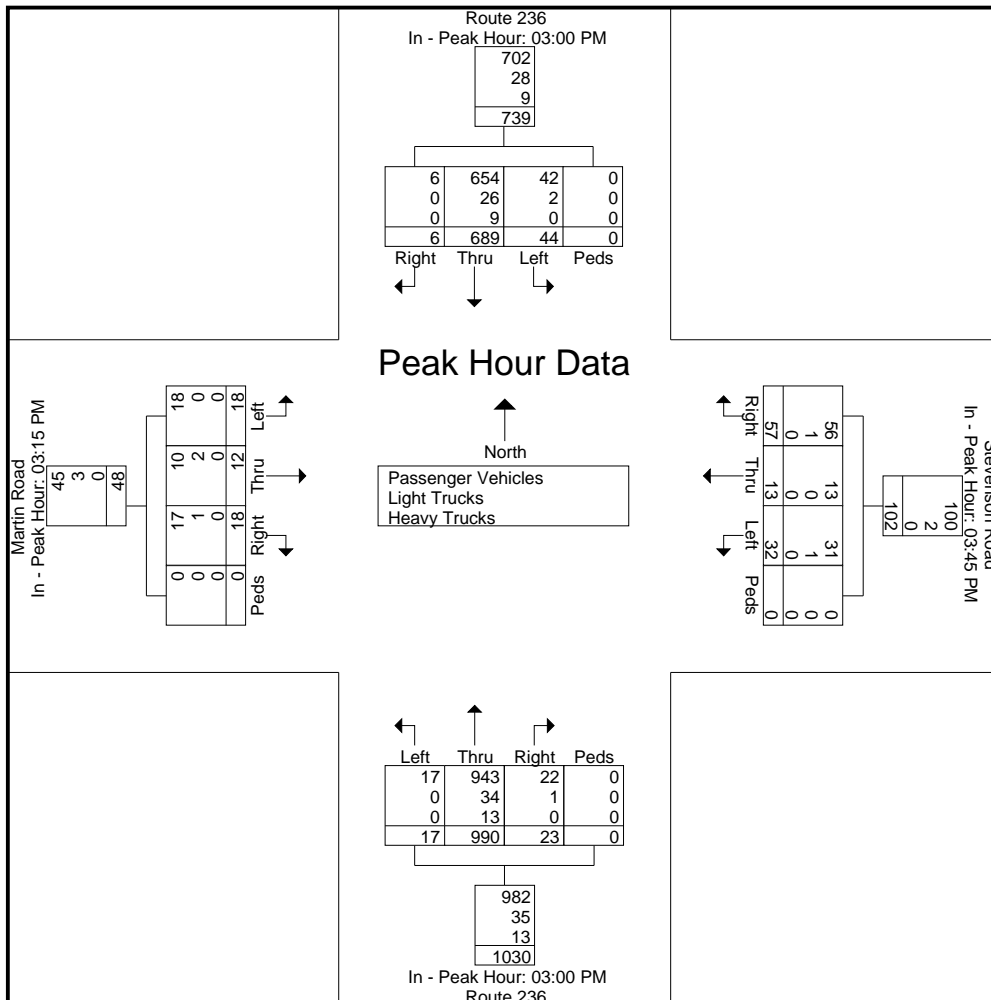
Sewall

40 Forest Falls Drive
Yarmouth, ME 04096

TITLE: Route 236, Martin & Stevenson Rds
TOWN: Kittery
COUNTER: JM
WEATHER: Sun/Clouds

File Name : KitteryRoute236MartinStevenPM2021
Site Code : 00129326
Start Date : 12/9/2021
Page No : 3

Start Time	Route 236 Southbound					Stevenson Road Westbound					Route 236 Northbound					Martin Road Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	03:00 PM					03:45 PM					03:00 PM					03:15 PM					
+0 mins.	1	168	9	0	178	9	6	7	0	22	3	240	2	0	245	3	2	3	0	8	
+15 mins.	0	181	10	0	191	18	4	9	0	31	6	254	2	0	262	3	3	6	0	12	
+30 mins.	3	171	11	0	185	15	3	6	0	24	6	268	7	0	281	5	3	6	0	14	
+45 mins.	2	169	14	0	185	15	0	10	0	25	8	228	6	0	242	7	4	3	0	14	
Total Volume	6	689	44	0	739	57	13	32	0	102	23	990	17	0	1030	18	12	18	0	48	
% App. Total	0.8	93.2	6	0		55.9	12.7	31.4	0		2.2	96.1	1.7	0		37.5	25	37.5	0		
PHF	.500	.952	.786	.000	.967	.792	.542	.800	.000	.823	.719	.924	.607	.000	.916	.643	.750	.750	.000	.857	
Passenger Vehicles																					
% Passenger Vehicles	100	94.	95.	0	95	98.	100	96.	0	98	95.	95.	100	0	95.3	94.	83.	100	0	93.8	
Light Trucks	0	26	2	0	28	1	0	1	0	2	1	34	0	0	35	1	2	0	0	3	
% Light Trucks	0	3.8	4.5	0	3.8	1.8	0	3.1	0	2	4.3	3.4	0	0	3.4	5.6	16.	7	0	6.2	
Heavy Trucks	0	9	0	0	9	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	
% Heavy Trucks																					



Sewall

40 Forest Falls Drive
Yarmouth, ME 04096

TITLE: Route 236, Stevenson & Martin Rd
TOWN: Kittery
COUNTER: JM
WEATHER: Rain/clouds

File Name : KitteryRoute236MartinSteveSat2021
Site Code : 01211121
Start Date : 12/11/2021
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

Start Time	Route 236 Southbound					Stevenson Road Westbound					Route 236 Northbound					Martin Road Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	1	147	17	0	165	8	1	1	0	10	1	123	2	0	126	3	5	2	0	10	311
11:15 AM	4	185	15	0	204	15	3	5	0	23	2	122	5	0	129	4	2	2	0	8	364
11:30 AM	1	154	13	0	168	10	2	6	0	18	4	122	3	0	129	4	1	3	0	8	323
11:45 AM	4	167	17	0	188	11	4	3	0	18	1	130	1	0	132	2	1	4	0	7	345
Total	10	653	62	0	725	44	10	15	0	69	8	497	11	0	516	13	9	11	0	33	1343
12:00 PM	2	160	17	0	179	12	1	6	0	19	6	122	1	0	129	2	0	5	0	7	334
12:15 PM	2	141	13	0	156	8	2	4	0	14	2	145	3	0	150	4	2	5	0	11	331
12:30 PM	2	176	16	0	194	9	1	5	0	15	4	110	2	0	116	10	4	5	0	19	344
12:45 PM	4	158	11	0	173	13	2	5	0	20	3	127	6	0	136	4	3	3	0	10	339
Total	10	635	57	0	702	42	6	20	0	68	15	504	12	0	531	20	9	18	0	47	1348
Grand Total	20	1288	119	0	1427	86	16	35	0	137	23	1001	23	0	1047	33	18	29	0	80	2691
Apprch %	1.4	90.3	8.3	0		62.8	11.7	25.5	0		2.2	95.6	2.2	0		41.2	22.5	36.2	0		
Total %	0.7	47.9	4.4	0	53	3.2	0.6	1.3	0	5.1	0.9	37.2	0.9	0	38.9	1.2	0.7	1.1	0	3	
Passenger Vehicles	20	1267	119	0	1406	85	16	35	0	136	22	989	23	0	1034	33	18	29	0	80	2656
% Passenger Vehicles	100	98.4	100	0	98.5	98.8	100	100	0	99.3	95.7	98.8	100	0	98.8	100	100	100	0	100	98.7
Light Trucks	0	15	0	0	15	1	0	0	0	1	1	9	0	0	10	0	0	0	0	0	26
% Light Trucks	0	1.2	0	0	1.1	1.2	0	0	0	0.7	4.3	0.9	0	0	1	0	0	0	0	0	1
Heavy Trucks	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	9
% Heavy Trucks	0	0.5	0	0	0.4	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0.3

Sewall

40 Forest Falls Drive
Yarmouth, ME 04096

TITLE: Route 236, Stevenson & Martin Rd
TOWN: Kittery
COUNTER: JM
WEATHER: Rain/clouds

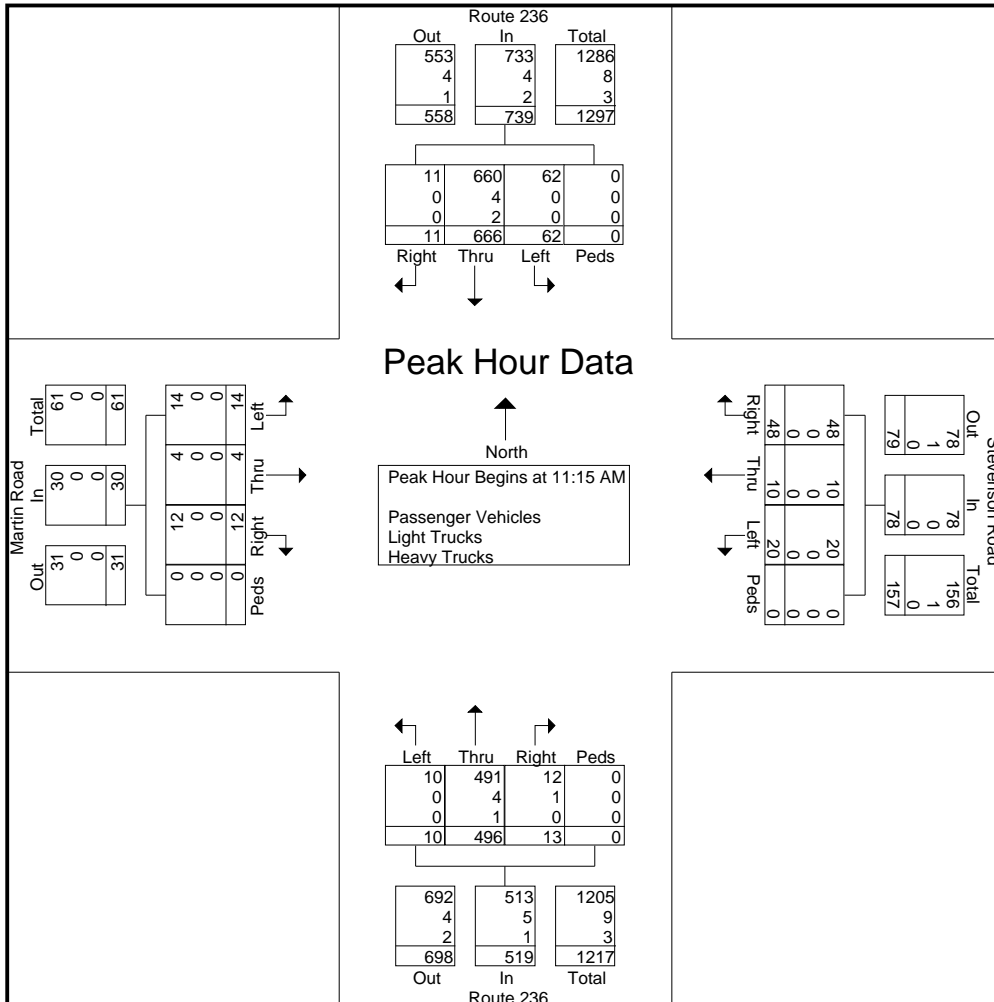
File Name : KitteryRoute236MartinSteveSat2021
Site Code : 01211121
Start Date : 12/11/2021
Page No : 2

Start Time	Route 236 Southbound					Stevenson Road Westbound					Route 236 Northbound					Martin Road Eastbound					Int. Total
	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	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	4	185	15	0	204	15	3	5	0	23	2	122	5	0	129	4	2	2	0	8	364
11:30 AM	1	154	13	0	168	10	2	6	0	18	4	122	3	0	129	4	1	3	0	8	323
11:45 AM	4	167	17	0	188	11	4	3	0	18	1	130	1	0	132	2	1	4	0	7	345
12:00 PM	2	160	17	0	179	12	1	6	0	19	6	122	1	0	129	2	0	5	0	7	334
Total Volume	11	666	62	0	739	48	10	20	0	78	13	496	10	0	519	12	4	14	0	30	1366
% App. Total	1.5	90.1	8.4	0		61.5	12.8	25.6	0		2.5	95.6	1.9	0		40	13.3	46.7	0		
PHF	.688	.900	.912	.000	.906	.800	.625	.833	.000	.848	.542	.954	.500	.000	.983	.750	.500	.700	.000	.938	.938
Passenger Vehicles	11	660	62	0	733	48	10	20	0	78	12	491	10	0	513	12	4	14	0	30	1354
% Passenger Vehicles	100	99.1	100	0	99.2	100	100	100	0	100	92.3	99.0	100	0	98.8	100	100	100	0	100	99.1
Light Trucks	0	4	0	0	4	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	9
% Light Trucks	0	0.6	0	0	0.5	0	0	0	0	0	7.7	0.8	0	0	1.0	0	0	0	0	0	0.7
Heavy Trucks	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% Heavy Trucks	0	0.3	0	0	0.3	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.2
	12	733	68			53	11	22			14	547	11			13	4	15			

Gr. I = 0.96/0.87 = 1.103



Sewall

40 Forest Falls Drive
Yarmouth, ME 04096

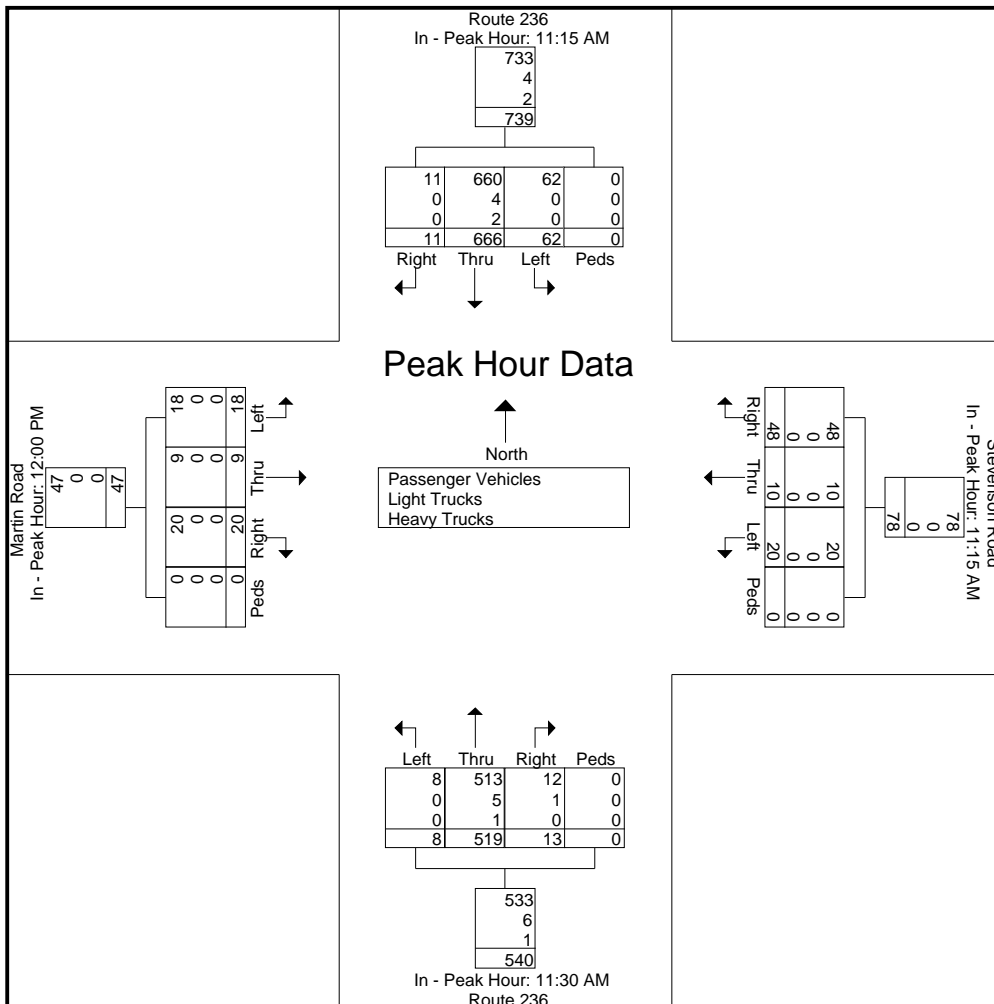
TITLE: Route 236, Stevenson & Martin Rd
TOWN: Kittery
COUNTER: JM
WEATHER: Rain/clouds

File Name : KitteryRoute236MartinSteveSat2021
Site Code : 01211121
Start Date : 12/11/2021
Page No : 3

Start Time	Route 236 Southbound					Stevenson Road Westbound					Route 236 Northbound					Martin Road Eastbound					Int. Total
	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	

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					12:00 PM									
+0 mins.	4	185	15	0	204	15	3	5	0	23	4	122	3	0	129	2	0	5	0	7
+15 mins.	1	154	13	0	168	10	2	6	0	18	1	130	1	0	132	4	2	5	0	11
+30 mins.	4	167	17	0	188	11	4	3	0	18	6	122	1	0	129	10	4	5	0	19
+45 mins.	2	160	17	0	179	12	1	6	0	19	2	145	3	0	150	4	3	3	0	10
Total Volume	11	666	62	0	739	48	10	20	0	78	13	519	8	0	540	20	9	18	0	47
% App. Total	1.5	90.1	8.4	0		61.5	12.8	25.6	0		2.4	96.1	1.5	0		42.6	19.1	38.3	0	
PHF	.688	.900	.912	.000	.906	.800	.625	.833	.000	.848	.542	.895	.667	.000	.900	.500	.563	.900	.000	.618
Passenger Vehicles	11	660	62	0	733	48	10	20	0	78	12	513	8	0	533	20	9	18	0	47
% Passenger Vehicles	100	99.	100	0	99.2	100	100	100	0	100	92.	98.	100	0	98.7	100	100	100	0	100
Light Trucks	0	4	0	0	4	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0
% Light Trucks	0	0.6	0	0	0.5	0	0	0	0	0	7.7	1	0	0	1.1	0	0	0	0	0
Heavy Trucks	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
% Heavy Trucks	0	0.3	0	0	0.3	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0



Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2090	2111	2124	2168	2150	2129
Vehs Exited	2095	2091	2116	2166	2154	2124
Starting Vehs	41	29	37	35	46	36
Ending Vehs	36	49	45	37	42	40
Travel Distance (mi)	867	869	879	899	894	882
Travel Time (hr)	35.7	32.5	34.5	41.8	36.5	36.2
Total Delay (hr)	12.9	9.8	11.5	18.3	13.2	13.2
Total Stops	742	600	687	1076	720	764
Fuel Used (gal)	30.8	29.6	30.7	34.1	31.8	31.4

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2090	2111	2124	2168	2150	2129
Vehs Exited	2095	2091	2116	2166	2154	2124
Starting Vehs	41	29	37	35	46	36
Ending Vehs	36	49	45	37	42	40
Travel Distance (mi)	867	869	879	899	894	882
Travel Time (hr)	35.7	32.5	34.5	41.8	36.5	36.2
Total Delay (hr)	12.9	9.8	11.5	18.3	13.2	13.2
Total Stops	742	600	687	1076	720	764
Fuel Used (gal)	30.8	29.6	30.7	34.1	31.8	31.4

3: Route 236 & Martin Road/Stevenson Road Performance by lane

Lane	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	LT	R	LT	R	L	TR	L	TR	
Denied Del/Veh (s)									1.4
Total Del/Veh (s)	46.7	7.3	46.5	27.7	44.9	20.8	46.6	5.8	16.9

Total Network Performance

Denied Del/Veh (s)		1.4
Total Del/Veh (s)		20.5

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	91	64	111	74	139	745	133	271
Average Queue (ft)	28	14	37	36	17	292	40	82
95th Queue (ft)	73	46	85	75	68	656	93	191
Link Distance (ft)	642		971			906		1226
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	8	0	9	9		12		1
Queuing Penalty (veh)	1	0	4	4		2		0

Network Summary

Network wide Queuing Penalty: 12

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	7.9	80.5	9.9	6.5	87.9	9.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	29	3	11	66	6	11
Cycles @ Minimum (%)	0	0	3	0	0	3
Cycles Maxed Out (%)	0	97	0	0	94	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2090	2111	2124	2168	2150	2129
Vehs Exited	2095	2091	2116	2166	2154	2124
Starting Vehs	41	29	37	35	46	36
Ending Vehs	36	49	45	37	42	40
Travel Distance (mi)	867	869	879	899	894	882
Travel Time (hr)	35.7	32.5	34.5	41.8	36.5	36.2
Total Delay (hr)	12.9	9.8	11.5	18.3	13.2	13.2
Total Stops	742	600	687	1076	720	764
Fuel Used (gal)	30.8	29.6	30.7	34.1	31.8	31.4

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2090	2111	2124	2168	2150	2129
Vehs Exited	2095	2091	2116	2166	2154	2124
Starting Vehs	41	29	37	35	46	36
Ending Vehs	36	49	45	37	42	40
Travel Distance (mi)	867	869	879	899	894	882
Travel Time (hr)	35.7	32.5	34.5	41.8	36.5	36.2
Total Delay (hr)	12.9	9.8	11.5	18.3	13.2	13.2
Total Stops	742	600	687	1076	720	764
Fuel Used (gal)	30.8	29.6	30.7	34.1	31.8	31.4

3: Route 236 & Martin Road/Stevenson Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.6	2.1	1.7	0.9	1.4
Total Del/Veh (s)	32.8	37.0	21.1	8.2	16.9

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	20.5

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	91	64	111	74	139	745	133	271
Average Queue (ft)	28	14	37	36	17	292	40	82
95th Queue (ft)	73	46	85	75	68	656	93	191
Link Distance (ft)	642		971			906		1226
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	8	0	9	9		12		1
Queuing Penalty (veh)	1	0	4	4		2		0

Network Summary

Network wide Queuing Penalty: 12

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	7.9	80.5	9.9	6.5	87.9	9.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	29	3	11	66	6	11
Cycles @ Minimum (%)	0	0	3	0	0	3
Cycles Maxed Out (%)	0	97	0	0	94	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2089	2111	2124	2167	2153	2129
Vehs Exited	2096	2083	2118	2166	2154	2124
Starting Vehs	36	18	31	31	31	29
Ending Vehs	29	46	37	32	30	33
Travel Distance (mi)	695	693	704	721	716	706
Travel Time (hr)	30.5	27.8	29.6	37.6	31.6	31.4
Total Delay (hr)	12.1	9.5	11.0	18.6	12.8	12.8
Total Stops	676	604	696	901	624	699
Fuel Used (gal)	27.1	25.9	27.0	30.5	28.0	27.7

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2089	2111	2124	2167	2153	2129
Vehs Exited	2096	2083	2118	2166	2154	2124
Starting Vehs	36	18	31	31	31	29
Ending Vehs	29	46	37	32	30	33
Travel Distance (mi)	695	693	704	721	716	706
Travel Time (hr)	30.5	27.8	29.6	37.6	31.6	31.4
Total Delay (hr)	12.1	9.5	11.0	18.6	12.8	12.8
Total Stops	676	604	696	901	624	699
Fuel Used (gal)	27.1	25.9	27.0	30.5	28.0	27.7

3: Route 236 & Martin Road/Stevenson Road Performance by lane

Lane	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	LT	R	LT	R	L	TR	L	TR	
Denied Del/Veh (s)									3.7
Total Del/Veh (s)	46.8	7.0	46.6	28.3	45.4	16.0	46.5	5.7	14.3

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	91	64	111	74	136	490	133	254
Average Queue (ft)	28	14	36	36	18	274	40	84
95th Queue (ft)	73	46	84	74	73	541	93	192
Link Distance (ft)	642		972					1226
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	8	0	9	9		13		1
Queuing Penalty (veh)	1	0	4	4		2		0

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	7.9	80.6	9.9	6.5	87.9	9.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	29	3	11	66	6	11
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	0	97	0	0	94	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2089	2111	2124	2167	2153	2129
Vehs Exited	2096	2083	2118	2166	2154	2124
Starting Vehs	36	18	31	31	31	29
Ending Vehs	29	46	37	32	30	33
Travel Distance (mi)	695	693	704	721	716	706
Travel Time (hr)	30.5	27.8	29.6	37.6	31.6	31.4
Total Delay (hr)	12.1	9.5	11.0	18.6	12.8	12.8
Total Stops	676	604	696	901	624	699
Fuel Used (gal)	27.1	25.9	27.0	30.5	28.0	27.7

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2089	2111	2124	2167	2153	2129
Vehs Exited	2096	2083	2118	2166	2154	2124
Starting Vehs	36	18	31	31	31	29
Ending Vehs	29	46	37	32	30	33
Travel Distance (mi)	695	693	704	721	716	706
Travel Time (hr)	30.5	27.8	29.6	37.6	31.6	31.4
Total Delay (hr)	12.1	9.5	11.0	18.6	12.8	12.8
Total Stops	676	604	696	901	624	699
Fuel Used (gal)	27.1	25.9	27.0	30.5	28.0	27.7

3: Route 236 & Martin Road/Stevenson Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.6	2.1	5.8	0.9	3.7
Total Del/Veh (s)	32.7	37.4	16.5	8.1	14.3

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	91	64	111	74	136	490	133	254
Average Queue (ft)	28	14	36	36	18	274	40	84
95th Queue (ft)	73	46	84	74	73	541	93	192
Link Distance (ft)	642		972					1226
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	8	0	9	9		13		1
Queuing Penalty (veh)	1	0	4	4		2		0

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	7.9	80.6	9.9	6.5	87.9	9.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	29	3	11	66	6	11
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	0	97	0	0	94	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2153	2253	2175	2301	2243	2226
Starting Vehs	50	46	46	56	47	47
Ending Vehs	49	52	37	40	53	45
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.2	48.4	41.3	50.4	43.6	45.0
Total Delay (hr)	13.3	19.3	13.4	20.8	14.6	16.3
Total Stops	721	1046	704	1202	827	899
Fuel Used (gal)	36.0	39.4	36.5	40.8	38.0	38.1

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2153	2253	2175	2301	2243	2226
Starting Vehs	50	46	46	56	47	47
Ending Vehs	49	52	37	40	53	45
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.2	48.4	41.3	50.4	43.6	45.0
Total Delay (hr)	13.3	19.3	13.4	20.8	14.6	16.3
Total Stops	721	1046	704	1202	827	899
Fuel Used (gal)	36.0	39.4	36.5	40.8	38.0	38.1

3: Route 236 & Martin Road/Stevenson Road Performance by lane

Lane	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	LT	R	LT	R	L	TR	L	TR	
Denied Del/Veh (s)									0.5
Total Del/Veh (s)	42.7	12.9	41.8	23.3	48.7	21.9	48.6	7.0	17.8

6: Route 236 & Site Drive Performance by lane

Lane	EB	NB	SB	All
Movements Served	LR	LT	TR	
Denied Del/Veh (s)				0.9
Total Del/Veh (s)	72.0	3.5	3.1	4.2

Total Network Performance

Denied Del/Veh (s)				1.3
Total Del/Veh (s)				24.5

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	84	59	96	72	172	726	202	281
Average Queue (ft)	27	13	35	33	20	308	46	96
95th Queue (ft)	67	42	76	68	77	644	112	220
Link Distance (ft)	642		972			879		1226
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						1		
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	7	0	10	6		14		1
Queuing Penalty (veh)	1	0	4	2		3		1

Intersection: 6: Route 236 & Site Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	112	286
Average Queue (ft)	28	35
95th Queue (ft)	81	169
Link Distance (ft)	232	456
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 12

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	8.2	78.8	10.0	6.5	83.3	10.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	31	3	9	60	3	9
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	0	97	0	0	97	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2153	2253	2175	2301	2243	2226
Starting Vehs	50	46	46	56	47	47
Ending Vehs	49	52	37	40	53	45
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.2	48.4	41.3	50.4	43.6	45.0
Total Delay (hr)	13.3	19.3	13.4	20.8	14.6	16.3
Total Stops	721	1046	704	1202	827	899
Fuel Used (gal)	36.0	39.4	36.5	40.8	38.0	38.1

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2153	2253	2175	2301	2243	2226
Starting Vehs	50	46	46	56	47	47
Ending Vehs	49	52	37	40	53	45
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.2	48.4	41.3	50.4	43.6	45.0
Total Delay (hr)	13.3	19.3	13.4	20.8	14.6	16.3
Total Stops	721	1046	704	1202	827	899
Fuel Used (gal)	36.0	39.4	36.5	40.8	38.0	38.1

3: Route 236 & Martin Road/Stevenson Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.6	1.9	0.0	1.0	0.5
Total Del/Veh (s)	32.1	33.2	22.3	9.4	17.8

6: Route 236 & Site Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	1.6	0.0	0.9
Total Del/Veh (s)	72.0	3.5	3.1	4.2

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	24.5

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	84	59	96	72	172	726	202	281
Average Queue (ft)	27	13	35	33	20	308	46	96
95th Queue (ft)	67	42	76	68	77	644	112	220
Link Distance (ft)	642		972			879		1226
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						1		
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	7	0	10	6		14		1
Queuing Penalty (veh)	1	0	4	2		3		1

Intersection: 6: Route 236 & Site Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	112	286
Average Queue (ft)	28	35
95th Queue (ft)	81	169
Link Distance (ft)	232	456
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 12

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	8.2	78.8	10.0	6.5	83.3	10.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	31	3	9	60	3	9
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	0	97	0	0	97	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2155	2253	2175	2302	2243	2227
Starting Vehs	50	46	46	57	47	48
Ending Vehs	47	52	37	40	53	43
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.1	48.1	41.3	50.7	43.9	45.0
Total Delay (hr)	13.3	19.0	13.3	21.1	14.9	16.3
Total Stops	720	1050	704	1195	843	902
Fuel Used (gal)	36.0	39.4	36.6	41.0	38.1	38.2

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2155	2253	2175	2302	2243	2227
Starting Vehs	50	46	46	57	47	48
Ending Vehs	47	52	37	40	53	43
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.1	48.1	41.3	50.7	43.9	45.0
Total Delay (hr)	13.3	19.0	13.3	21.1	14.9	16.3
Total Stops	720	1050	704	1195	843	902
Fuel Used (gal)	36.0	39.4	36.6	41.0	38.1	38.2

3: Route 236 & Martin Road/Stevenson Road Performance by lane

Lane	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	LT	R	LT	R	L	TR	L	TR	
Denied Del/Veh (s)									0.5
Total Del/Veh (s)	42.7	12.9	42.3	23.3	48.7	22.0	48.6	7.1	17.8

6: Route 236 & Site Drive Performance by lane

Lane	EB	EB	NB	SB	All
Movements Served	L	R	LT	TR	
Denied Del/Veh (s)					1.0
Total Del/Veh (s)	123.6	8.5	3.6	3.1	4.2

Total Network Performance

Denied Del/Veh (s)				1.4
Total Del/Veh (s)				24.5

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	84	59	96	72	146	724	202	299
Average Queue (ft)	27	13	35	33	19	306	45	100
95th Queue (ft)	67	42	76	68	71	633	112	233
Link Distance (ft)	642		972			879		1226
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						1		
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	7	0	10	6		14		1
Queuing Penalty (veh)	1	0	4	2		3		1

Intersection: 6: Route 236 & Site Drive

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	97	50	290
Average Queue (ft)	20	17	38
95th Queue (ft)	67	49	180
Link Distance (ft)	232		444
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)		25	
Storage Blk Time (%)	27	4	
Queuing Penalty (veh)	5	1	

Network Summary

Network wide Queuing Penalty: 17

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	8.2	78.7	10.1	6.5	83.3	10.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	31	3	9	60	3	9
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	0	97	0	0	97	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2155	2253	2175	2302	2243	2227
Starting Vehs	50	46	46	57	47	48
Ending Vehs	47	52	37	40	53	43
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.1	48.1	41.3	50.7	43.9	45.0
Total Delay (hr)	13.3	19.0	13.3	21.1	14.9	16.3
Total Stops	720	1050	704	1195	843	902
Fuel Used (gal)	36.0	39.4	36.6	41.0	38.1	38.2

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2152	2259	2166	2285	2249	2221
Vehs Exited	2155	2253	2175	2302	2243	2227
Starting Vehs	50	46	46	57	47	48
Ending Vehs	47	52	37	40	53	43
Travel Distance (mi)	1063	1113	1072	1136	1110	1099
Travel Time (hr)	41.1	48.1	41.3	50.7	43.9	45.0
Total Delay (hr)	13.3	19.0	13.3	21.1	14.9	16.3
Total Stops	720	1050	704	1195	843	902
Fuel Used (gal)	36.0	39.4	36.6	41.0	38.1	38.2

3: Route 236 & Martin Road/Stevenson Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.6	1.9	0.0	1.0	0.5
Total Del/Veh (s)	32.1	33.4	22.4	9.5	17.8

6: Route 236 & Site Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.4	1.7	0.0	1.0
Total Del/Veh (s)	60.1	3.6	3.1	4.2

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	24.5

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	84	59	96	72	146	724	202	299
Average Queue (ft)	27	13	35	33	19	306	45	100
95th Queue (ft)	67	42	76	68	71	633	112	233
Link Distance (ft)	642		972			879		1226
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						1		
Storage Bay Dist (ft)		50		50	175		200	
Storage Blk Time (%)	7	0	10	6		14		1
Queuing Penalty (veh)	1	0	4	2		3		1

Intersection: 6: Route 236 & Site Drive

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	97	50	290
Average Queue (ft)	20	17	38
95th Queue (ft)	67	49	180
Link Distance (ft)	232		444
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)		25	
Storage Blk Time (%)	27	4	
Queuing Penalty (veh)	5	1	

Network Summary

Network wide Queuing Penalty: 17

Intersection: 3: Route 236 & Martin Road/Stevenson Road

Phase	1	2	4	5	6	8
Movement(s) Served	SBL	NBT	EBTL	NBL	SBT	WBTL
Maximum Green (s)	8.0	59.0	21.0	8.0	59.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0
Recall	None	C-Max	None	None	C-Max	None
Avg. Green (s)	8.2	78.7	10.1	6.5	83.3	10.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	31	3	9	60	3	9
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	0	97	0	0	97	0
Cycles with Peds (%)	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	17	18	1167	824	12
Future Vol, veh/h	13	17	18	1167	824	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	97	97
Heavy Vehicles, %	1	1	5	5	5	5
Mvmt Flow	14	18	20	1268	849	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2163	855	861	0	-	0
Stage 1	855	-	-	-	-	-
Stage 2	1308	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	52	359	768	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	47	359	768	-	-	-
Mov Cap-2 Maneuver	47	-	-	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	254	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	57.2	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	768	-	47	359	-	-
HCM Lane V/C Ratio	0.025	-	0.301	0.051	-	-
HCM Control Delay (s)	9.8	0	111.7	15.6	-	-
HCM Lane LOS	A	A	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1	0.2	-	-



December 13, 2021

Mr. Randy Illian, P.E.
Region 1 Traffic Engineer
Maine Department of Transportation
51 Pleasant Hill Road
Scarborough, ME 04074-9306

RE: Proposed Marijuana Sales Shop at 41 Route 236 in Kittery

Dear Randy,

Sewall was retained to perform a traffic impact study for a proposed marijuana sales shop at 41 Route 236 in Kittery, Maine. The gross square footage (S.F.) of the proposed building is 3,150. Access to the site will be provided by a new full-movement drive to Route 236. A copy of the preliminary site plan is attached for your information. The trip generation for the marijuana shop will be well under 100 trips in peak hours. This building is being located on a lot that contains an existing business suites building, Pine Brook, falling under common scheme. It is understood that the business suites building was constructed in 2002 so its trips are not currently grandfathered. The land where the new retail shop building will go is currently utilized for boat storage.

TRIP GENERATION ANALYSIS

The number of trips to be generated by the proposed marijuana sales facility was estimated utilizing the latest Institute of Transportation Engineers (ITE) "Trip Generation, 11th edition". Land use code (LUC) 882 – Marijuana Dispensary was utilized on the basis of 3,150 gross S.F. The results are summarized below:

<u>Time Period</u>	ITE TRIP GENERATION <u>One-Way Trip-Ends</u>
Weekday	666
AM Peak Hour – Adjacent Street	33
Entering	17
Exiting	16

<u>Time Period</u>	<u>One-Way Trip-Ends</u>
AM Peak Hour – Generator	52
Entering	28
Exiting	24
PM Peak Hour – Adjacent Street	60
Entering	30
Exiting	30
PM Peak Hour – Generator	77
Entering	38
Exiting	39
Saturday Peak Hour - Generator	91
Entering	46
Exiting	45

The preceding results show that the proposed marijuana shop is expected to generate from 33 to 91 one-way trips in peak hours. The highest peak hour trip generation will occur during the weekday PM and Saturday peak hour periods, typical of retail establishments.

In terms of state traffic permitting, any previous development on the lot, or adjacent lots under common ownership, within the past ten years must also be considered. The proposed building is being developed on a site that was previously developed with the Pine Brook Business Suites. It is understood that this existing building is 7,292 S.F. and is currently fully occupied with the following uses:

- 6,342 S.F. General Offices
- 300 S.F. Doctor Office
- One Residential Apartment

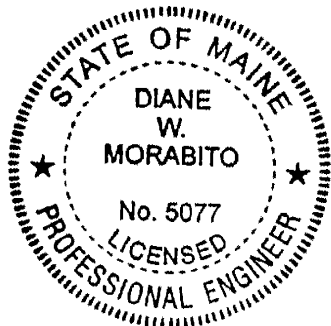
The trips for Pine Brook Business Suites were hence estimated using the following ITE land use codes on the noted bases:

- LUC 710 - General Offices – 6,342 S.F.
- LUC 720 – Medical-Dental Office - 300 S.F.
- LUC 210 – Single Family House – 1 Dwelling Unit

These results for the business suites are summarized below along with the marijuana sales facility trips:

<u>Time Period</u>	ITE TRIP GENERATION (one-way trip-ends)				
	<u>Retail</u>	<u>Offices</u>	<u>Medical</u>	<u>Apt.</u>	<u>Total</u>
AM Peak Hour – Adjacent Street	33	16	1	1	51
Entering	17	14	1	0	32
Exiting	16	2	0	1	19
AM Peak Hour – Generator	52	16	4	1	73
Entering	28	14	2	0	44
Exiting	24	2	2	1	29
PM Peak Hour – Adjacent Street	60	17	1	1	79
Entering	30	3	0	1	34
Exiting	30	14	1	0	45
PM Peak Hour – Generator	77	17	1	1	96
Entering	38	3	0	1	42
Exiting	39	14	1	0	54
Saturday Peak Hour - Generator	91	3	1	1	96
Entering	46	2	1	1	50
Exiting	45	1	0	0	46

As seen above, the proposed marijuana sales shop, when combined with the adjacent Pine Brook Business Suites, is projected to generate a maximum of 96 one-way trips in peak hours. Since the 100-trip threshold is not met a traffic movement permit (TMP) should not be required by MaineDOT. However, given that the results are close to the threshold can you review this analysis to see if you concur with it and the finding that a TMP is not required? As always, thanks for your assistance.



Sincerely,

A handwritten signature in black ink that reads "Diane W. Morabito" followed by a stylized flourish.

Diane W. Morabito, P.E. PTOE
Vice President Traffic Engineering

Michael Cuomo, Soil Scientist
6 York Pond Road, York, Maine 03909
207 363 4532
mcuomosoil@gmail.com

23 November 2021

Brian Nielsen
Attar Engineering, Inc.
1284 State Road
Eliot, Maine 03903

Dear Mr. Nielsen;

This letter is in reference to the Island Marine property located at 41 Route 236 in Kittery, Maine. On 22 November 2021 I conducted a wetland delineation on this property to assist you in planning the redevelopment of this parcel.

Wetlands are defined by the town of Kittery Land Use ordinance as follows:

Wetland means areas that under normal circumstances have hydrophytic vegetation, hydric soils, and wetland hydrology as determined in the Corps of Engineers Wetlands Delineation Manual - *Waterways Experiment Station Technical Report Y-87-1, January 1987*" (1987 manual). This definition of wetland is based on the 1987 manual and is not subject to further revisions and/or amendments.

Wetland characteristics were identified in the field using the technical criteria in the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region*. The soil component was classified using the *Field Indicators of Hydric Soils in the United States*. The wetland status of plants were determined using the *National List of Plant Species that Occur in Wetlands: Northeast (Region 1)*. This is the standard used by State and Federal regulators.

Two wetlands were identified which meet the above definition. Blue flags A1 to A27 and flags B1 to B7 identify two sides of the same wetland. This is a large wetland, greater than an acre in size, and it continues off the property to the south. This wetland contains forested, shrub, and emergent marsh cover types. The emergent marsh vegetation appears larger than 20,000 square feet in area.

The second wetland is identified by flags C1 to C15 along the eastern property line. This shrub and forested wetland is

greater than an acre in size and continues off the property to the north and also drains across Route 236 through a culvert to the east. Flags C7 through C9 identify a portion of the wetland confined to a ditch at the base of the fill slope along Route 236.

Both of these wetlands have been partially filled.

I recommend you have the site investigated for vernal pools early in the Spring.

Please call if you have questions about this work or if I may be of further assistance.

Sincerely,



Michael Cuomo
Maine Soil Scientist #211





DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND AND WATER QUALITY

1/21/200

CONTACT ID 7506

FIELD DETERMINATION FORM

CONTACT

DARREN LAPIERRE
ISLAND MARINE SERVICE
32 ROUTE 236
KITTERY ME 03904
2074393810

DIRECTIONS

Rt 95 south to Rt 236 exit in Kittery. Follow Rt 236 north for less than 1/4 of a mile from the turnpike to Island Marine Service on the right.

PROPERTY OWNER

LAPIERRE, DARREN
ISLAND MARINE SERVICE
KITTERY ME 03904

STAFF COPPI, CHRIS

RESOURCE FW

SITE TOWN KITTERY

MAP LOT

29 1

MEMO

On January 20, 2009, Darren Lapierre and Chris Coppi met on site at 32 Route 236 for a wetland setback determination and to discuss permitting requirements for a proposed boat storage area. The property contains a freshwater wetland with less than 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water as defined by the Natural Resources Protection Act (NRPA).

Island Marine Service is proposing to clear, strip, and grade 2 acres of upland area including areas to the wetland edge. The entire 2 acre area will be revegetated with grass. Less than 1 acre of this area will be used for the access road, and associated turnaround areas. The remaining area will be used for seasonal boat storage. A stormwater permit by rule is required for this activity which includes submitting a erosion control and site plan to scale indicating the location of the access road, turnaround area, and storage area.

Under the NRPA, the Department regulates activities in the wetland but not within 75 feet of the edge of the wetland. The property qualifies for a one-time only wetland alteration exemption of no more than 4,300 square feet of alteration which can include removing vegetation and placing fill material in the wetland. A NRPA permit will be required for wetland alterations exceeding this amount.

NAME: Chris Coppi 1/21/09

RECEIVED 1/15/2009 SITE VISIT 1/20/2009 COMPLETED 1/21/2009



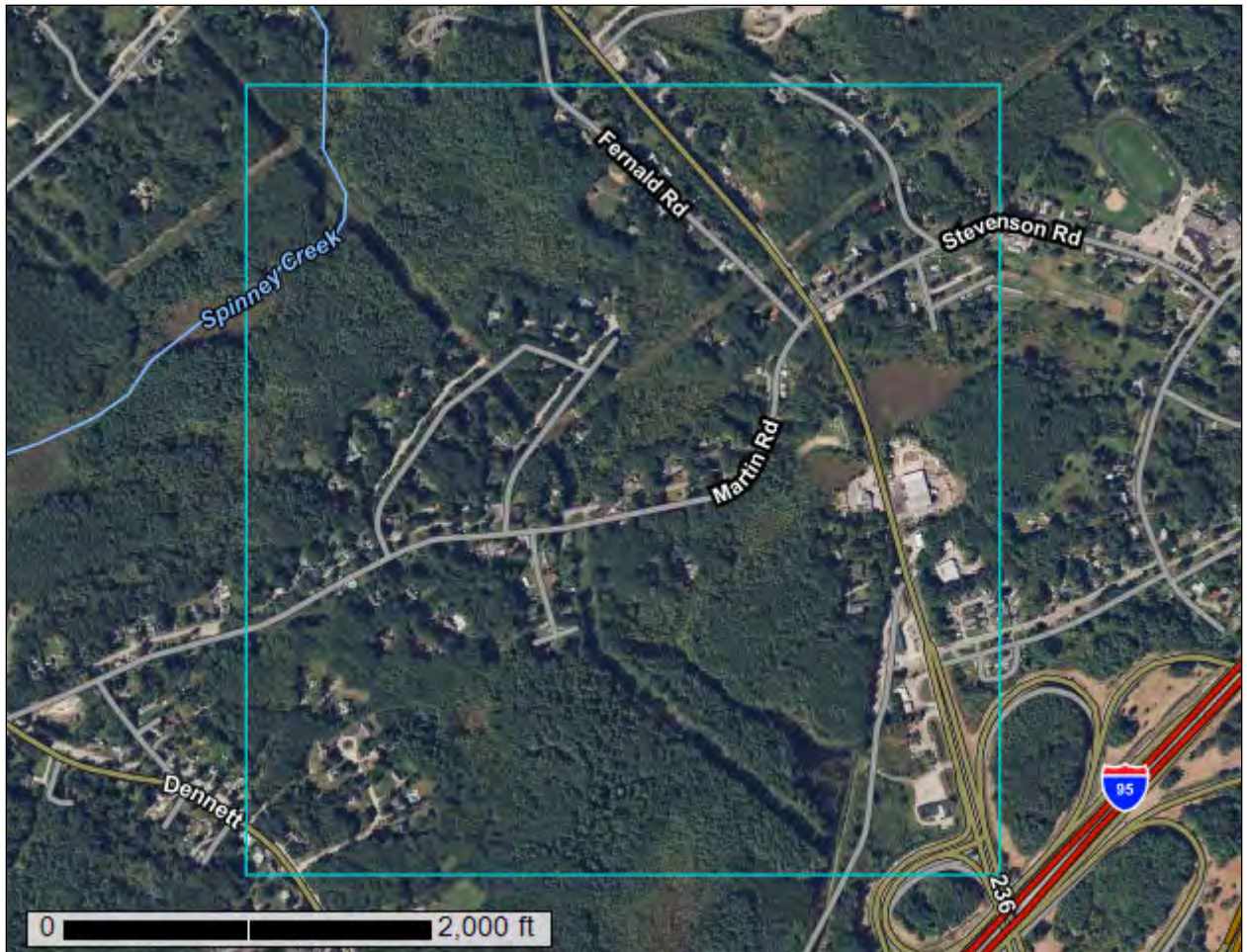
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for York County, Maine



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

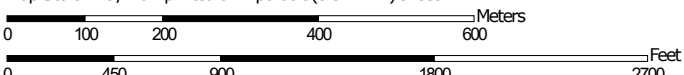
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:9,710 if printed on A portrait (8.5" x 11") sheet.



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


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 1:20,000.

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: York County, Maine
 Survey Area Data: Version 20, Aug 31, 2021

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

Date(s) aerial images were photographed: Sep 19, 2021—Nov 1, 2021

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
AgB	Adams-Urban land complex, 0 to 8 percent slopes	0.1	0.0%
Bm	Biddeford mucky peat, 0 to 3 percent slopes	80.5	19.8%
BrB	Brayton and Westbury fine sandy loams, 0 to 8 percent slopes	1.0	0.2%
BsB	Brayton and Westbury very stony fine sandy loams, 0 to 8 percent slopes	2.1	0.5%
CoB	Colton gravelly sandy loam, 0 to 8 percent slopes	28.5	7.0%
CoC	Colton gravelly sandy loam, 8 to 15 percent slopes	12.4	3.0%
CoD	Colton gravelly sandy loam, 15 to 25 percent slopes	11.3	2.8%
CrB	Croghan loamy fine sand, 0 to 8 percent slopes, wooded	18.4	4.5%
LnB	Lyman loam, 3 to 8 percent slopes, rocky	32.9	8.1%
LnC	Lyman loam, 8 to 15 percent slopes, rocky	64.1	15.7%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	19.8	4.9%
LyC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	9.6	2.4%
LyE	Lyman-Rock outcrop complex, 15 to 80 percent slopes	2.1	0.5%
MrB	Marlow fine sandy loam, 3 to 8 percent slopes	11.8	2.9%
MrC2	Marlow fine sandy loam, 8 to 15 percent slopes	9.9	2.4%
Na	Naumburg sand	3.1	0.8%
PeB	Peru fine sandy loam, 3 to 8 percent slopes	1.0	0.2%
Pg	Pits, gravel	16.3	4.0%
Sc	Scantic silt loam, 0 to 3 percent slopes	15.5	3.8%
SeB	Scio silt loam, 3 to 8 percent slopes	4.9	1.2%
SkB	Skerry fine sandy loam, 0 to 8 percent slopes	11.2	2.7%
SrB	Skerry fine sandy loam, 0 to 8 percent slopes, very stony	4.8	1.2%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ur	Urban land	24.3	6.0%
W	Water bodies	22.1	5.4%
Totals for Area of Interest		407.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Custom Soil Resource Report

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

York County, Maine

AgB—Adams-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wqnv
Elevation: 490 to 1,310 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 28 to 52 degrees F
Frost-free period: 110 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Adams and similar soils: 45 percent
Urban land: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adams

Setting

Landform: Outwash deltas
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand
Bs - 7 to 21 inches: sand
BC - 21 to 27 inches: sand
C - 27 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Outwash deltas
Landform position (two-dimensional): Summit, backslope

Custom Soil Resource Report

Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Bm—Biddeford mucky peat, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t0jn
Elevation: 10 to 900 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Biddeford and similar soils: 82 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Biddeford

Setting

Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Organic material over glaciomarine deposits

Typical profile

Oe - 0 to 12 inches: mucky peat
Eg - 12 to 16 inches: silt loam
Bg - 16 to 45 inches: silty clay
Cg - 45 to 65 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Ecological site: F144BY304ME - Wet Clay Flat, F144BY002ME - Marine Terrace Depression
Hydric soil rating: Yes

BrB—Brayton and Westbury fine sandy loams, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9k52
Elevation: 10 to 2,500 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Brayton and similar soils: 70 percent
Westbury and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brayton

Setting

Landform: Till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from mica schist and/or coarse-loamy lodgment till derived from gneiss

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 14 inches: fine sandy loam
H3 - 14 to 65 inches: fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to densic material
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Description of Westbury

Setting

Landform: Till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from granite and gneiss

Typical profile

H1 - 0 to 4 inches: fine sandy loam
H2 - 4 to 23 inches: fine sandy loam
H3 - 23 to 36 inches: fine sandy loam
H4 - 36 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 13 to 24 inches to densic material
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 7 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

BsB—Brayton and Westbury very stony fine sandy loams, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9k53
Elevation: 10 to 2,500 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Brayton and similar soils: 60 percent
Westbury and similar soils: 25 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brayton

Setting

Landform: Till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Coarse-loamy lodgment till derived from mica schist and/or coarse-loamy lodgment till derived from gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material

H1 - 2 to 8 inches: fine sandy loam

H2 - 8 to 14 inches: fine sandy loam

H3 - 14 to 65 inches: fine sandy loam

Properties and qualities

Slope: 0 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 10 to 20 inches to densic material

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: F144BY502ME - Loamy Till Toeslope

Hydric soil rating: Yes

Description of Westbury

Setting

Landform: Till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Coarse-loamy lodgment till derived from granite and gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material

H1 - 2 to 5 inches: fine sandy loam

H2 - 5 to 23 inches: fine sandy loam

H3 - 23 to 37 inches: fine sandy loam

H4 - 37 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Custom Soil Resource Report

Depth to restrictive feature: 13 to 24 inches to densic material
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144BY502ME - Loamy Till Toeslope
Hydric soil rating: No

CoB—Colton gravelly sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2ym4k
Elevation: 10 to 2,000 feet
Mean annual precipitation: 31 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Colton and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Kames, eskers
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal glaciofluvial deposits

Typical profile

Oe - 0 to 4 inches: moderately decomposed plant material
E - 4 to 6 inches: gravelly sandy loam
Bs - 6 to 14 inches: gravelly loamy sand
BC - 14 to 24 inches: very gravelly coarse sand
C - 24 to 65 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Hydric soil rating: No

CoC—Colton gravelly sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2yig3

Elevation: 10 to 2,000 feet

Mean annual precipitation: 31 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Colton and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Kames, eskers

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy-skeletal glaciofluvial deposits

Typical profile

Oe - 0 to 4 inches: moderately decomposed plant material

E - 4 to 6 inches: gravelly sandy loam

Bs - 6 to 14 inches: gravelly loamy sand

BC - 14 to 24 inches: very gravelly coarse sand

C - 24 to 65 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 14.17 in/hr)

Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

CoD—Colton gravelly sandy loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2yjfr
Elevation: 540 to 2,000 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Colton and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Kames, eskers
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal glaciofluvial deposits

Typical profile

Oe - 0 to 4 inches: moderately decomposed plant material
E - 4 to 6 inches: gravelly sandy loam
Bs - 6 to 14 inches: gravelly loamy sand
BC - 14 to 24 inches: very gravelly coarse sand
C - 24 to 65 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Hydric soil rating: No

CrB—Croghan loamy fine sand, 0 to 8 percent slopes, wooded

Map Unit Setting

National map unit symbol: 2wqp0

Elevation: 150 to 2,300 feet

Mean annual precipitation: 40 to 55 inches

Mean annual air temperature: 37 to 46 degrees F

Frost-free period: 90 to 135 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Croghan and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Croghan

Setting

Landform: Marine terraces, outwash deltas

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

Oa - 0 to 4 inches: highly decomposed plant material

E - 4 to 6 inches: loamy fine sand

Bs - 6 to 17 inches: loamy fine sand

BC - 17 to 30 inches: fine sand

C - 30 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 14.17 in/hr)

Depth to water table: About 18 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

LnB—Lyman loam, 3 to 8 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2trq7
Elevation: 0 to 520 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 60 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lyman, rocky, and similar soils: 86 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman, Rocky

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainbase, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loam
E - 3 to 5 inches: fine sandy loam
Bhs - 5 to 7 inches: loam
Bs1 - 7 to 11 inches: loam
Bs2 - 11 to 18 inches: channery loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 11 to 24 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: D
Hydric soil rating: No

LnC—Lyman loam, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2trq9
Elevation: 0 to 690 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 60 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Lyman, rocky, and similar soils: 86 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman, Rocky

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainflank, mountainbase, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loam
E - 3 to 5 inches: fine sandy loam
Bhs - 5 to 7 inches: loam
Bs1 - 7 to 11 inches: loam
Bs2 - 11 to 18 inches: channery loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 11 to 24 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Hydric soil rating: No

LyB—Lyman-Rock outcrop complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2trqh

Elevation: 0 to 560 feet

Mean annual precipitation: 36 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 60 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Lyman, very stony, and similar soils: 65 percent

Rock outcrop: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman, Very Stony

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountaintop, mountainbase, side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: loam

E - 3 to 5 inches: fine sandy loam

Bhs - 5 to 7 inches: loam

Bs1 - 7 to 11 inches: loam

Bs2 - 11 to 18 inches: channery loam

R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.5 percent

Depth to restrictive feature: 11 to 24 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainbase, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 10 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low to very high (0.00 to 14.17 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

LyC—Lyman-Rock outcrop complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2trqj
Elevation: 0 to 790 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 60 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Lyman, very stony, and similar soils: 62 percent
Rock outcrop: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman, Very Stony

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountaintop, mountainbase, side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: loam

E - 3 to 5 inches: fine sandy loam

Bhs - 5 to 7 inches: loam

Bs1 - 7 to 11 inches: loam

Bs2 - 11 to 18 inches: channery loam

R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.5 percent

Depth to restrictive feature: 11 to 24 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: F144BY701ME - Shallow Till

Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountaintop, mountainbase, side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 10 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Custom Soil Resource Report

Depth to restrictive feature: 0 inches to lithic bedrock

Capacity of the most limiting layer to transmit water (Ksat): Very low to very high
(0.00 to 14.17 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: Unranked

LyE—Lyman-Rock outcrop complex, 15 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2trqp

Elevation: 0 to 980 feet

Mean annual precipitation: 36 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 60 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Lyman, very stony, and similar soils: 60 percent

Rock outcrop: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman, Very Stony

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountaintop, mountainflank, side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: loam

E - 3 to 5 inches: fine sandy loam

Bhs - 5 to 7 inches: loam

Bs1 - 7 to 11 inches: loam

Bs2 - 11 to 18 inches: channery loam

R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 15 to 80 percent

Surface area covered with cobbles, stones or boulders: 1.5 percent

Depth to restrictive feature: 11 to 24 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: F144BY701ME - Shallow Till

Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountaintop, mountainflank, side slope, crest, free face

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 10 inches: bedrock

Properties and qualities

Slope: 15 to 80 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Capacity of the most limiting layer to transmit water (Ksat): Very low to very high (0.00 to 14.17 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: Unranked

MrB—Marlow fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2ty5d

Elevation: 0 to 690 feet

Mean annual precipitation: 36 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlow and similar soils: 87 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlow

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountainbase, interfluvium, nose slope, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

Typical profile

Ap - 0 to 4 inches: fine sandy loam

E - 4 to 6 inches: fine sandy loam

Bs1 - 6 to 10 inches: fine sandy loam

Bs2 - 10 to 15 inches: fine sandy loam

Bs3 - 15 to 20 inches: fine sandy loam

BC - 20 to 24 inches: fine sandy loam

Cd - 24 to 65 inches: fine sandy loam

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 20 to 39 inches to densic material

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)

Hydric soil rating: No

MrC2—Marlow fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2ty5g

Elevation: 0 to 820 feet

Mean annual precipitation: 36 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Marlow and similar soils: 88 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlow

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountainflank, mountainbase, interfluve, nose slope, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

Typical profile

Ap - 0 to 4 inches: fine sandy loam

E - 4 to 6 inches: fine sandy loam

Bs1 - 6 to 10 inches: fine sandy loam

Bs2 - 10 to 15 inches: fine sandy loam

Bs3 - 15 to 20 inches: fine sandy loam

BC - 20 to 24 inches: fine sandy loam

Cd - 24 to 65 inches: fine sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: 20 to 39 inches to densic material

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)

Hydric soil rating: No

Na—Naumburg sand

Map Unit Setting

National map unit symbol: 9k67

Elevation: 200 to 1,800 feet

Mean annual precipitation: 34 to 50 inches

Mean annual air temperature: 41 to 45 degrees F

Custom Soil Resource Report

Frost-free period: 90 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Naumburg and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Naumburg

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from granite and gneiss

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material
H1 - 2 to 9 inches: sand
H2 - 9 to 32 inches: sand
H3 - 32 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 6.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

PeB—Peru fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2ty5x
Elevation: 0 to 720 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Peru and similar soils: 88 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peru

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainbase, interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

Typical profile

Ap - 0 to 6 inches: fine sandy loam

Bhs - 6 to 8 inches: fine sandy loam

Bs1 - 8 to 12 inches: fine sandy loam

Bs2 - 12 to 18 inches: fine sandy loam

Bs3 - 18 to 21 inches: fine sandy loam

BC - 21 to 24 inches: fine sandy loam

Cd - 24 to 65 inches: sandy loam

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 20 to 39 inches to densic material

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: About 16 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D

Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)

Hydric soil rating: No

Pg—Pits, gravel

Map Unit Composition

Pits: 88 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits

Setting

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Typical profile

H1 - 0 to 6 inches: extremely gravelly sand
H2 - 6 to 60 inches: extremely gravelly sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Sc—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2slv3
Elevation: 10 to 900 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Scantic and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scantic

Setting

Landform: Marine terraces, river valleys
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Bg1 - 9 to 16 inches: silty clay loam
Bg2 - 16 to 29 inches: silty clay
Cg - 29 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w

Custom Soil Resource Report

Hydrologic Soil Group: D
Ecological site: F144BY304ME - Wet Clay Flat
Hydric soil rating: Yes

SeB—Scio silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9k6l
Elevation: 0 to 300 feet
Mean annual precipitation: 48 to 51 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 145 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Scio and similar soils: 89 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scio

Setting

Landform: Lakebeds
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Very fine sand glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 26 inches: silt loam
H3 - 26 to 36 inches: silt loam
H4 - 36 to 65 inches: very fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

SkB—Skerry fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w9pg

Elevation: 160 to 750 feet

Mean annual precipitation: 36 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Skerry and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Skerry

Setting

Landform: Mountains, hills

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainbase, interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy lodgment till derived from granite and gneiss and/or schist
over sandy lodgment till derived from granite and gneiss and/or schist

Typical profile

Ap - 0 to 6 inches: fine sandy loam

Bs1 - 6 to 20 inches: gravelly fine sandy loam

Bs2 - 20 to 25 inches: gravelly fine sandy loam

Cd1 - 25 to 34 inches: gravelly loamy sand

Cd2 - 34 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: 21 to 43 inches to densic material

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: About 18 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Hydric soil rating: No

SrB—Skerry fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w9pc

Elevation: 160 to 1,380 feet

Mean annual precipitation: 31 to 65 inches

Mean annual air temperature: 36 to 52 degrees F

Frost-free period: 90 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Skerry, very stony, and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Skerry, Very Stony

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainbase, interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy lodgment till derived from granite and gneiss and/or schist
over sandy lodgment till derived from granite and gneiss and/or schist

Typical profile

Oa - 0 to 2 inches: highly decomposed plant material

E - 2 to 4 inches: fine sandy loam

Bhs - 4 to 6 inches: fine sandy loam

Bs1 - 6 to 20 inches: gravelly fine sandy loam

Bs2 - 20 to 25 inches: gravelly fine sandy loam

Cd1 - 25 to 34 inches: gravelly loamy sand

Cd2 - 34 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.1 percent

Depth to restrictive feature: 21 to 43 inches to densic material

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: About 19 to 34 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C/D

Custom Soil Resource Report

Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)
Hydric soil rating: No

Ur—Urban land

Map Unit Composition

Urban land: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope, tread

Down-slope shape: Linear

Across-slope shape: Linear

Typical profile

H1 - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent

Drainage class: Moderately well drained

Depth to water table: About 24 to 72 inches

Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

W—Water bodies

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Hills

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