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**Level III - Preliminary Site Plan Development Review  
Application**

**97 Cumberland Avenue  
Portland, Maine**

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## **Preliminary Site Plan Application**





## Level III – Preliminary and Final Site Plans Development Review Application Portland, Maine

Planning and Urban Development Department  
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level II: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

### Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

The Land Use Code (including Article V), the Technical Manual, and the Design Manual are available on the City's web site at <http://www.portlandmaine.gov/planning/default.asp>

#### Planning Division

Fourth Floor, City Hall  
389 Congress Street  
(207) 874-8721 or 874-8719

#### Office Hours

Monday thru Friday  
8:00 a.m. – 4:30 p.m.

**PROJECT NAME:** 97 Cumberland

**PROPOSED DEVELOPMENT ADDRESS:**

97 Cumberland Ave, Portland, ME 04101

**PROJECT DESCRIPTION:**

See attached description

**CHART/BLOCK/LOT:** 13/C/25

**PRELIMINARY PLAN** \_\_\_\_\_ (date)

**FINAL PLAN** \_\_\_\_\_ (date)

**CONTACT INFORMATION:**

<b>Applicant – must be owner, Lessee or Buyer</b> Name: Peter Dugas Business Name, if applicable: Address: 243 State St. City/State : Portland, ME Zip Code: 04101	<b>Applicant Contact Information</b> Work # Home# 207-899-2409 Cell # Fax# e-mail: dugas3@gmail.com
<b>Owner – (if different from Applicant)</b> Name: Same as Applicant Address: City/State : Zip Code:	<b>Owner Contact Information</b> Work # Home# Cell # Fax# e-mail:
<b>Agent/ Representative</b> Name: Timothy Lock (GO Logic) Address: P.O. Box 567 City/State : Belfast, ME Zip Code: 04915	<b>Agent/Representative Contact information</b> Work # 338-1566 x250 Cell # e-mail: tim@gologic.us
<b>Billing Information</b> Name: Timothy Lock (GO Logic) Address: P.O. Box 567 City/State : Belfast, ME Zip Code: 04915	<b>Billing Information</b> Work # 338-1566 x250 Cell # Fax# e-mail: tim@gologic.us



**APPLICATION SUBMISSION:**

1. All site plans and written application materials must be submitted electronically on a CD or DVD with each plan submitted as separate files, with individual file names (see submittal requirements document attached).
2. In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Planning Division Office to start the review process.

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

1. One (1) full size site plans that must be folded.
2. One (1) copy of all written materials or as follows, unless otherwise noted:
  - a. Application form that is completed and signed.
  - b. Cover letter stating the nature of the project.
  - c. All Written Submittals (Sec. 14-525 2. (c), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

**Refer to the application checklist for a detailed list of submission requirements.**

Portland’s development review process and requirements are outlined in the Land Use Code (Chapter 14), which includes the Subdivision Ordinance (Section 14-491) and the Site Plan Ordinance (Section 14-521). Portland’s Land Use Code is on the City’s web site <http://www.portlandmaine.gov/citycode/chapter014.pdf>

**APPLICANT SIGNATURE:**

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement’s authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

**This application is for a Level II Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.**

Signature of Applicant:	Date:
-------------------------	-------

## PROJECT DATA

The following information is required where applicable, in order to complete the application.

<b>Total Area of Site</b>	5550	sq. ft.
<b>Proposed Total Disturbed Area of the Site</b>	2914	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland		
<b>Impervious Surface Area</b>		
Impervious Area (Total Existing)	N/A	sq. ft.
Impervious Area (Total Proposed)	2914	sq. ft.
<b>Building Ground Floor Area and Total Floor Area</b>		
Building Footprint (Total Existing)	N/A	sq. ft.
Building Footprint (Total Proposed)	1790	sq. ft.
Building Floor Area (Total Existing)	N/A	sq. ft.
Building Floor Area (Total Proposed)	6990	sq. ft.
<b>Zoning</b>		
Existing		
Proposed, if applicable		
<b>Land Use</b>		
Existing	Residential	
Proposed	Residential	
<b>Residential, If applicable</b>		
# of Residential Units (Total Existing)	N/A	
# of Residential Units (Total Proposed)	5	
# of Lots (Total Proposed)	1	
# of Affordable Housing Units (Total Proposed)		
<b>Proposed Bedroom Mix</b>		
# of Efficiency Units (Total Proposed)	N/A	
# of One-Bedroom Units (Total Proposed)	4	
# of Two-Bedroom Units (Total Proposed)	1	
# of Three-Bedroom Units (Total Proposed)	N/A	
<b>Parking Spaces</b>		
# of Parking Spaces (Total Existing)	N/A	
# of Parking Spaces (Total Proposed)	5	
# of Handicapped Spaces (Total Proposed)	N/A	
<b>Bicycle Parking Spaces</b>		
# of Bicycle Spaces (Total Existing)	N/A	
# of Bicycle Spaces (Total Proposed)	Per technical manual requirements	
<b>Estimated Cost of Project</b>	\$900,000	

<b>PRELIMINARY PLAN (Optional) - Level III Site Plan</b>			
<b>Applicant Checklist</b>	<b>Planner Checklist</b>	<b># of Copies</b>	<b>GENERAL WRITTEN SUBMISSIONS CHECKLIST</b>
		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
<b>Applicant Checklist</b>	<b>Planner Checklist</b>	<b># of Copies</b>	<b>SITE PLAN SUBMISSIONS CHECKLIST</b>
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	<b>Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)</b>
			Proposed grading and contours;
			Existing structures with distances from property line;
			Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;
			Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);
			Preliminary infrastructure improvements;
			Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;
			Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);
			Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);
			Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;
			Exterior building elevations.

## **Introduction + Project Team**



### **Introduction**

The proposed new multi-family building at 97 Cumberland Ave. requires planning board approval given the subdivision of more than two units. The property owner is electing to proceed with a Preliminary Level III Site plan review as suggested by the Planning Department. In addition to the standard requirements of a Level III Site Plan the owner requests that the proposed design be assessed under the Alternate Design Review provision of the R-6 zoning district Design Manual. GO Logic LLC, an Architecture and Construction firm (ME Licensed Architect, Lic #3810), has been hired by the property owner to provide design services to develop the planning for the house and the garage, and has prepared this application on their behalf.

A schematic design and siting of the building have been determined. The bulk and height of the proposed building are in compliance with the R-6 zoning district limitations. In addition, all setbacks have been met along with total lot coverage limitations

### **Project Description**

The property is a 5050 square foot parcel (.12 acre) located at 97 Cumberland Ave. The nearest major intersection is with Washington Ave. The existing use of the property is single-family residential; a vacant single-family house has been demolished by the property owner.

The property shares an access easement with the neighboring properties of 93 Cumberland Ave. and 93 Rear Cumberland Ave. The easement is disclosed in the deed to the property and survey included with this submittal. The property owner intends to maintain and improve this access.

No accessory structures are currently planned on the property.

### **Project Team**

Property Owner – Peter & Annie Dugas

Architect – GOL Logic, LLC; Timothy Lock, Project Architect

Surveyor – Owen Haskell

Civil Engineer – Sebago Technics

Structural Engineer – Albert Putnam, PE

Mechanical Engineer – Andrew McPartland, PE





## **Code + Zoning Assesment**



## Lot Information

Address: 97 Cumberland St.

Block: 013

## Summary Of Zoning and Code Regulations

### Zoning Restrictions – Based On Portland Zoning Ordinance

#### Zoning District – R6

#### Minimum Setback Requirements

##### Principal Structure

Front: 10 feet (or even with neighboring buildings)  
Side: 3 stories – 10 feet  
Rear: 20 feet

#### Lot Restrictions

Gross Area 4500 SF  
Minimum Street Frontage: 40 feet  
Lot Coverage: 50% maximum up to 20 dwelling units – 2945 SF  
Open Space Requirement: 20% of lot area – 1180 SF

##### Lot Compliance

Gross Area: 5050 SF  
Street Frontage: 43 feet  
Lot Coverage (Building): 1790 SF  
Total Impervious Surface: 2914 SF

#### Building Bulk

##### Principle Structure

Floor Area Ratio (FAR): N/A  
Building Height Limit: 45 ft. (above average finished grade at fronting street)  
Number of Stories: 3 plus Basement  
Overall Building Size: 6990 SF  
Total Number of Dwelling Units: 5

#### Use Restrictions and Requirements

##### Principle Structure

Proposed use: Multi-family housing

Permitted uses:

- Multi-family housing
- Single-family house
- Temporary lodging (hotel, etc.)

- Conditional uses:

- Professional offices and similar business use types

##### Parking

Required Off-street Parking: 1 space per dwelling unit – 5 spaces provided

## **Project Description**

## 97 Cumberland Ave.

Occupying a thin, infill property on the edge of the R-6 district in Munjoy Hill near the intersection of Cumberland Ave. and Washington Avenue, 97 Cumberland Avenue is a proposed small, five-unit multi-family development setting. The property owner is a Portland resident looking to construct a high-performance multi-family building. GO Logic is a Belfast based architecture and construction firm specializing in thermally efficient buildings based on the German Passive House standard. With all of our projects we believe there is an inherent synergy between designing for human comfort and long-term sustainability. If the building's design is based on specific and local climactic conditions well integrated with the building's function, the comfort of occupant and interaction with the site and surrounding buildings will be optimized. When the building envelope is designed and executed well the building will require almost no supplemental heating energy and will provide a stable and comfortable interior environment. The relationship between thermal performance and human comfort results in an inherently compelling architectural response, as climate, form and function work in unison.

Technically, we set a goal for all of our projects to have the energy demand for space heating and cooling reduced to almost zero, allowing for the installation of renewable energy systems to create more energy than is consumed. Our design approach starts with a highly-insulated building shell that makes use of passive solar gain to lower space heating demands, allowing the cost and complexity of the mechanical systems to be minimized. Our target level of energy performance for the building as a whole is the German Passive House standard for space heating and air infiltration, which represents a 90% improvement on the buildings' space heating loads from typical code-complaint construction. These improvements over conventional construction, in conjunction with heat recovery ventilation, result in a building with an extremely small energy demand. Furthermore, due to the minimized heat load, a solar electric system can cover the building's space and domestic water heating demands in most climate regions, resulting in a cost-effective, grid-tied, Energy-Plus building as measured on an annual basis. While all of our projects are designed and built to these standards, we have had officially certified three single-family residences in Maine, Connecticut, and Michigan and one dormitory for Unity College in Unity, Maine. In addition, we have certification pending on the first certified Passive House laboratory in North America for the University of Chicago and a fourth single family residence in Western Massachusetts. We are bringing this design approach to a multi-family building, for the first time, at 97 Cumberland Avenue. It is on track to be the first certified multi-family Passive House in the state of Maine.

The constrained site and solar orientation of 97 Cumberland poses thermal performance challenges. While we would typically take advantage of the sunny Maine winter to provide additional passive solar heating, we have taken different approach here, resulting a more compact building, in keeping with the mass of the surrounding buildings and scale of typical fenestration in the neighborhood. In order to increase the thermal performance for the larger building, the building is divided into two parts by an enclosed common stair allowing each structure to minimize the ratio of exterior wall to enclosed volume. Four one-bedroom apartments and one two-story three-bedroom are spread between the two structures effectively reducing the perceived scale of building as a whole. The site slopes down to the rear of the property allowing covered parking under the back building and reducing the building height along the street front. The roof of the front building is pitched on an angle towards solar south to accommodate a photovoltaic array while the rear building offers a common roof deck surrounded by a screen wall supporting climbing vines continuing down the common stair. We are proposing an exterior finish in keeping with the neighboring industrial buildings along Washington Avenue. We are applying for an Alternative Design Review on this project.



## **Design Principals + Standards**



## Overall Context

The neighborhood surrounding 97 Cumberland Avenue is unique in that it is a hinge-point between the large-scale, masonry industrial aesthetic of the buildings lining the north side of Washington Avenue and the two and three story clap-board-sided residential buildings of Cumberland Avenue.

While the property is accessed only from Cumberland Avenue, the surrounding topography and grade of Cumberland Avenue allows the West side façade to be fully visible from Washington Street above a gas station and convenient store at 21 Washington Ave.





The proposed design attempts to negotiate this divide by establishing an industrial-scale west façade facing Washington Avenue. The South façade, facing Cumberland Avenue, takes advantage of the rise in grade toward Cumberland Ave. effectively reducing the height of the building along this more residential street to three stories keeping it consistent with other multi-family buildings to the east.

Additionally, the proposed fenestration coordinates the scale of masonry openings along Washington Avenue with smaller, residential scale openings while maintaining a proportion of un-fenestrated wall consistent with surrounding buildings. We have included several examples of buildings with similar features to those describing our proposal below in the surrounding neighborhood.



Site viewed from Washington Ave - Existing



Site viewed from Washington Ave - Proposed





129 Washington Ave



5 Washington Ave



129 Washington Ave





97 Cumberland Ave: Rendering



96 Sheridan St



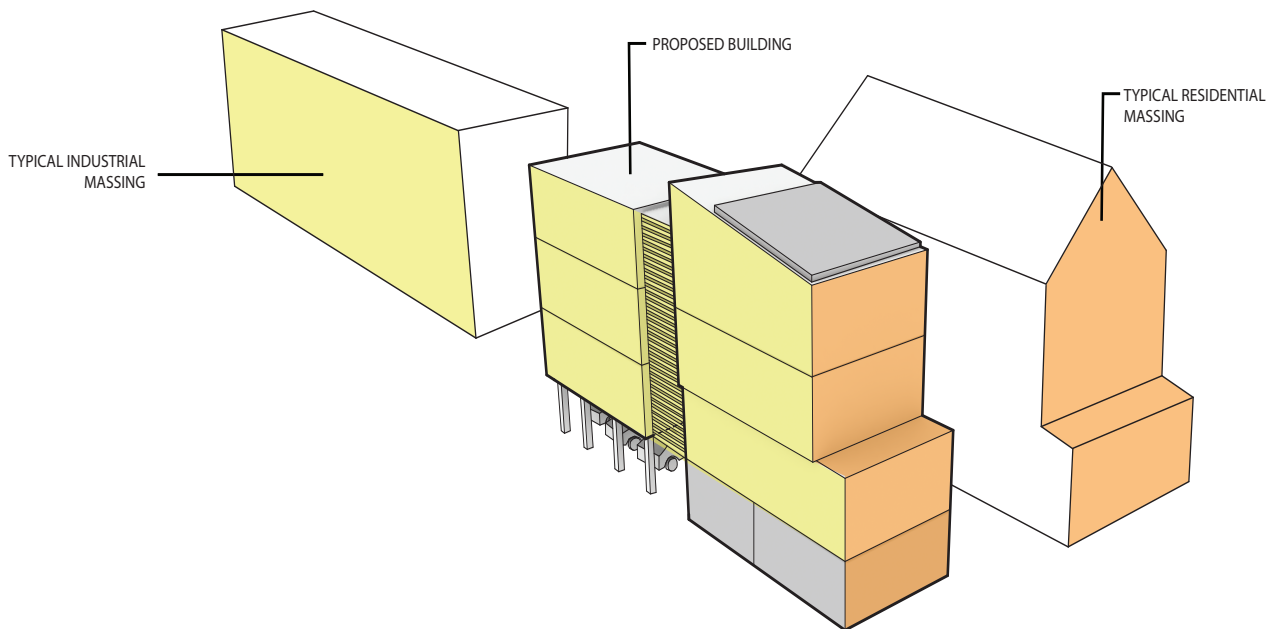
59 Cumberland Ave



97 Cumberland Ave

## Massing

The intent of the proposed massing of the new building at 97 Cumberland Ave. is, as noted above, to maintain the size and scale of the residential buildings along Cumberland Ave. when viewed from the Northeast while responding to the form and of industrial masonry buildings when viewed from the West along Washington Avenue.



By dividing the building into two structures with a common stair the impression of the overall mass is reduced. The separation between the structures is mitigated by a planted wall of climbing vines, providing shade to the enclosed common stair and a further break in the overall building mass. Further breaking down the mass of the building as viewed along Cumberland Ave., the ground floor dwelling unit extends to the front yard set back providing a recessed and covered ground floor entry and a balcony for the 2<sup>nd</sup> floor dwelling unit. This serves to further breakdown the mass at the street and reduce the impact of the three-story height by reflecting the mass of traditional porch structures and extended bay windows in the surrounding neighborhood.

(front rendering with everything but entry porch desaturated)



While the north structure utilizes a flat roof similar to the surrounding masonry buildings, the south building at Cumberland Avenue has a single pitched shed roof oriented specifically to solar south generating a roof form designed to maximize electricity production. The resulting roof area is sufficient to power the heating and cooling systems for both structures. Several instances of single pitched shed roofs are present in the surrounding neighborhood.



97 Cumberland Ave. - Proposed

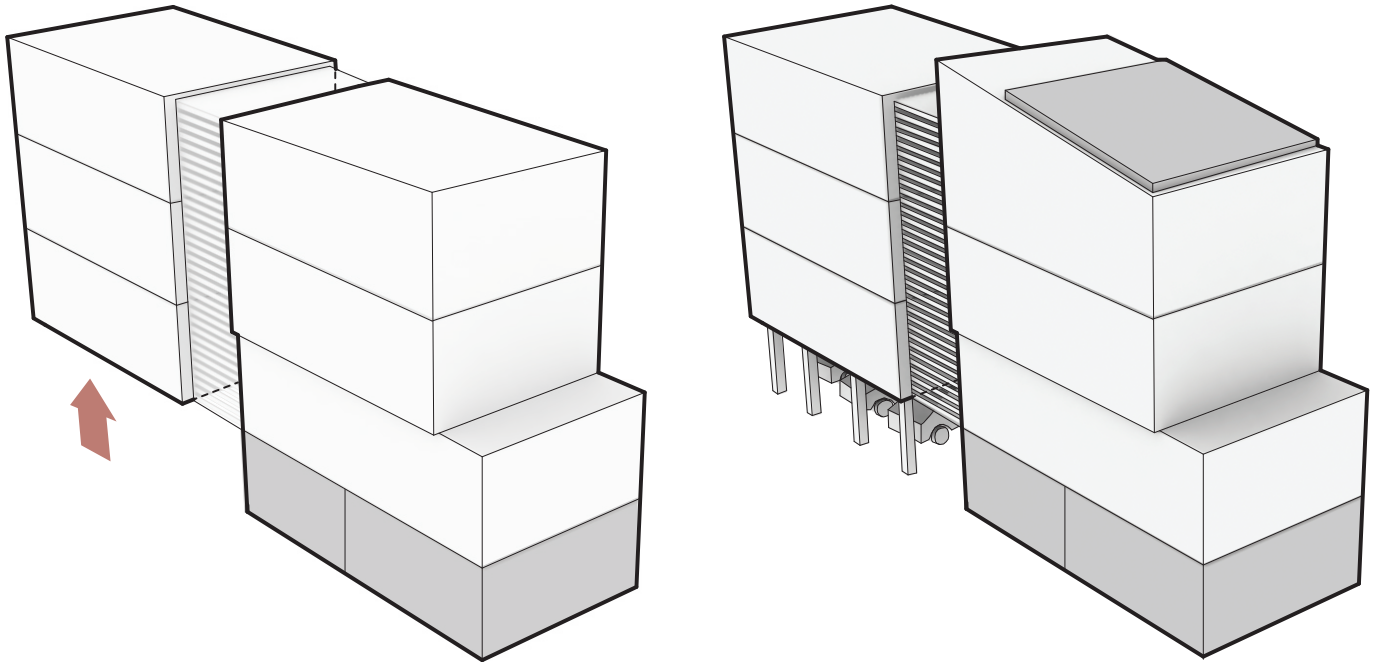


96 Sheridan St.



3 Greenleaf St.

Again, utilizing the natural grade of the site, we have situated an accessory garage under the north structure providing discrete parking concealed from view from the street.



Parking Diagram

## Orientation To Street

We have situated the building to provide clear entry from the street frontage along Cumberland Avenue. The first floor dwelling has direct access to the front yard through a covered and recessed entry deck providing privacy from the street. The finished floor elevation of the street level unit is two feet above the highest portion of public sidewalk, further shielding it from the street. The main access to the common enclosed stair follows an elevated walkway deck effectively separating the common entry from the street level dwelling unit at the street. The walkway is clearly delineated from the site access point along the east edge of the property.

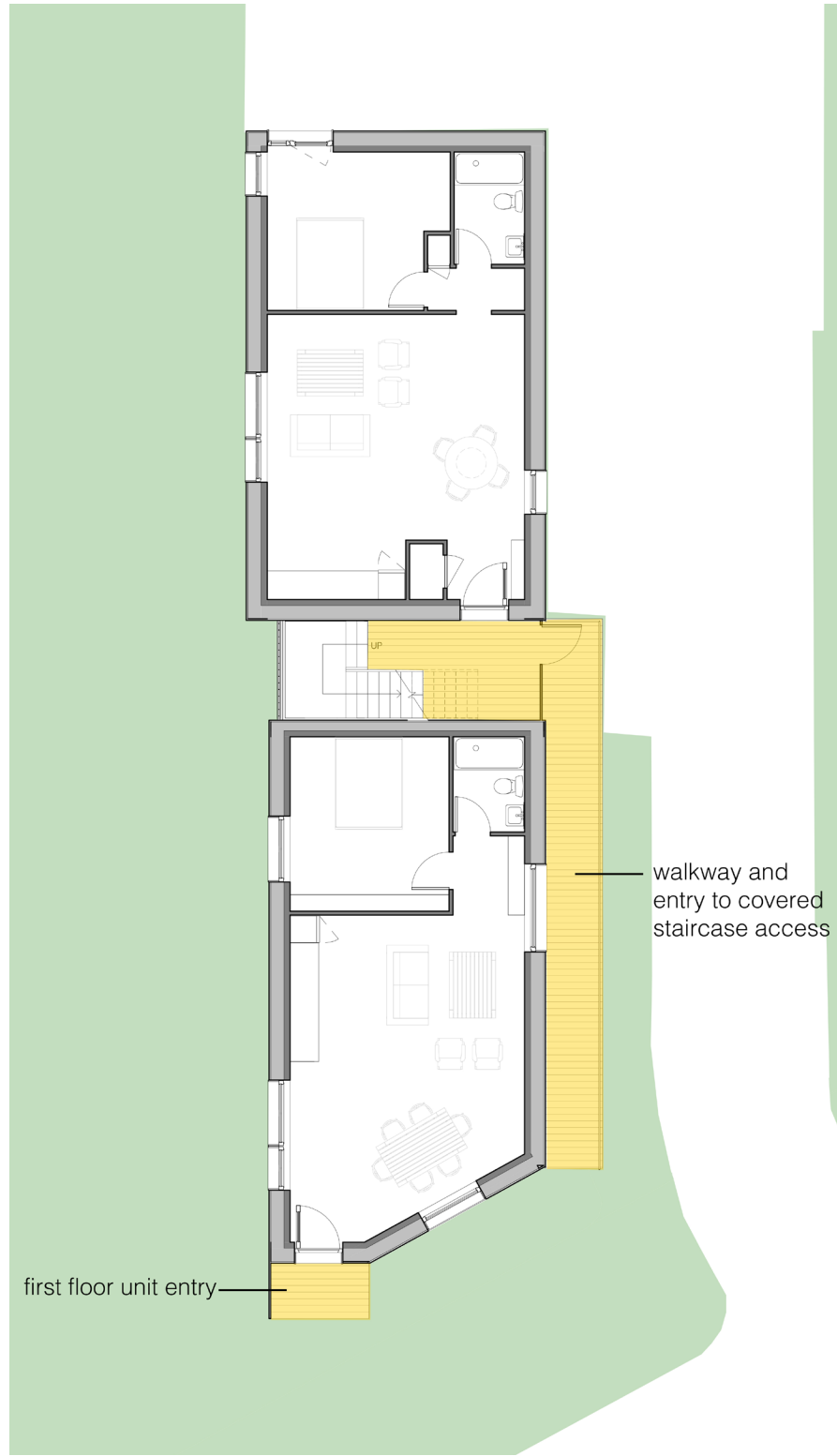


97 Cumberland Ave. - Proposed Front Entry



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97 Cumberland Ave. - Plan Diagram at Entry



## Proportions and Scale

The proposed building attempts to replicate the proportions and scale of the surrounding residential buildings in height and width. We have paired this compact building scale with fenestration along the façade reflecting the proportions and scale of the glazed openings of the industrial buildings along Washington Avenue.

The surrounding residential buildings lining Cumberland Avenue are, in general, three stories in height and approximately twenty to twenty five feet wide. We have maintained these proportions on the façade facing Cumberland Avenue.

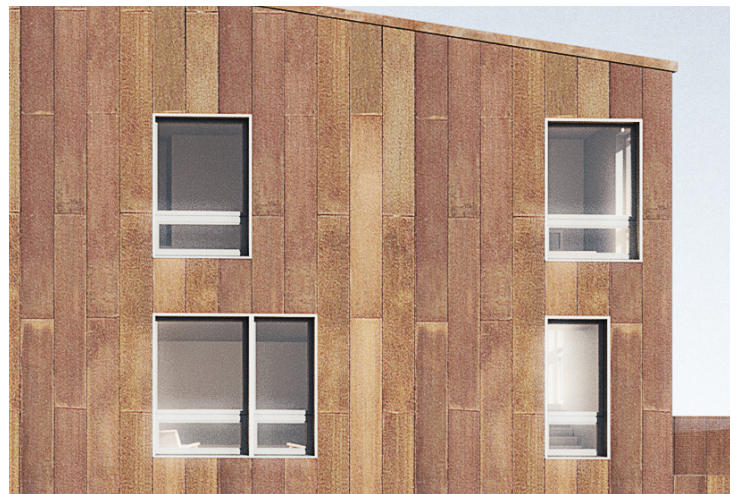
## Balance and Articulation

The proposed design strives to maintain a consistency of fenestration throughout within a contemporary architectural language. The openings consist of a repetition of two window sizes. The window heights are consistent on each façade. Further, all window openings are aligned along horizontal datum lines delineating floors.

One tall, vertical window outlines an interior stair of a two-story dwelling unit on the Cumberland Avenue façade. To reduce total building heat loss, the windows on the North and East facades are smaller, but consistent in size.



63 Washington Ave. - Fenestration



97 Cumberland Ave. - Proposed Fenestration



59 Cumberland Ave. - Fenestration



97 Cumberland Ave. - Proposed Fenestration

While the building is contemporary in architectural language, we have included modern versions of classic building articulations. All windows are trimmed to the exterior finish in a contrasting finish to the building cladding. The roof fascia provides delineation to the roof line, yet is matched in material to the façade. We have been careful to limit the material palette to the cladding and contrasting trim throughout. Porches (both the entry porch to the first floor dwelling unit along Cumberland Avenue and the main entry porch to the common stair are carefully fit within the overall building volume. Materials





Given the position of the property within the existing local urban context, we feel it is important to establish a visual and material relationship with the industrial buildings along Washington Avenue. We have chosen a metal panel exterior cladding in a rust-red finish to reflect the color and texture of the surrounding masonry buildings.



63 Washington Ave. - Red Brick Material Finish



97 Cumberland Ave. - Proposed Rust-Red Metal Panel Finish





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## **Evidence of Right, Title and Interest**



Return to:

Peter C. Dugas and Anastasia Antonacos  
97 Cumberland Avenue  
Portland, ME 04101

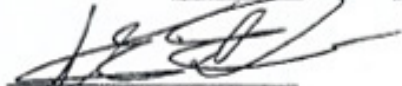
### WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS: That I, **John A. Edwards**, of 97 Cumberland Avenue, Portland, Maine for consideration paid, grant to **Peter C. Dugas and Anastasia Antonacos**, of 243 State Street, Portland, ME 04101, as joint tenants with rights of survivorship with WARRANTY COVENANTS:

SEE ATTACHED EXHIBIT A.

MEANING and INTENDING to describe and convey all and the same of the premises conveyed to the grantor herein by deed of Robert A. Arnold and Thuong Arnold dated 5/5/2006 recorded at Book 23929, Page 301 in the Cumberland County Registry of Deeds.

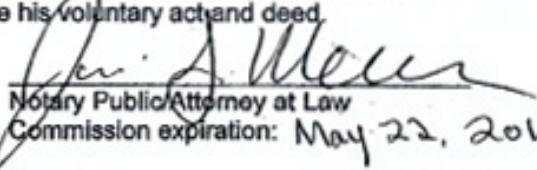
Executed this 12 day of MARCH, 2013

  
John A. Edwards

State of Oregon  
County of Clackamas

03 12 2013

Then personally appeared before me the said John A. Edwards and acknowledged the foregoing to be his voluntary act and deed.

  
Notary Public Attorney at Law  
Commission expiration: May 22, 2016





**EXHIBIT A**

A certain lot or parcel of land, with the buildings thereon, situated on the northwesterly side of Cumberland Avenue in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at an iron pin set in the ground at the southwesterly corner of lot numbered three (3) as shown on a certain plot plan of property of Walter A. Gerry at 93 and 97 Cumberland Avenue, Portland, Maine as drawn by Varney Engineering Company, North Windham, Maine, October 8, 1946, a copy of which plot plan is recorded in the Cumberland County Registry of Deeds in Plan Book 32, Page 28, and reference to which plot plan is hereby made; thence northeasterly by Cumberland Avenue forty- three (43) feet to another iron pin set in the ground at the point where lot numbered three (3) and lot numbered one (1) meet; thence northwesterly by the line of lot numbered one (1) one hundred twenty-five and six tenths (125.6) feet to land formerly of Homan; thence westerly by said Homan land forty-two and seventy-five hundredths (42.75) feet to a stake; thence southeasterly one hundred forty-two and five tenths (142.5) feet to Cumberland Avenue at the point of beginning;

Being lot numbered three (3) as shown on said plan.

Together with a right of way over, along and upon said lot numbered one (1) as shown on said plot plan, easterly of and adjacent to the premises herein described.





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## **Existing and Proposed Easements, Covenants and Rights-of-way**

**WARRANTY DEED**

KNOW ALL MEN BY THESE PRESENTS, THAT I, **CAROL S. PIKE**, of Portland, County of Cumberland and State of Maine, FOR CONSIDERATION PAID, grant to **CAROL S. PIKE AND JAMES F. PIKE**, both of Portland, County of Cumberland and State of Maine, as joint tenants with WARRANTY COVENANTS, the following described real property located in the City of Portland, County of Cumberland and State of Maine:

A certain lot of parcel of land together with the buildings thereon, situated in Portland, County of Cumberland and State of Maine, and being Lot #1 as delineated on the plan recorded in the Cumberland County Registry of Deeds in Plan Book 32, Page 28, being a Portland of the premises conveyed by deed recorded in said Registry of Deeds in Book 1831, Page 423, and more particularly bounded and described as follows:

Beginning on the Northwesterly sideline of Cumberland Avenue in said Portland at the Southeasterly corner of the premises conveyed by Walter A. Gerry et al to Robert E. McInnis by deed dated October 16, 1946 and recorded in said Registry of Deeds in Book 1848, Page 165; thence Northeasterly by Cumberland Avenue forty seven (47) feet to a point; thence Northerly forty eight and eight tenths (48.8) feet to a point thence Westerly forty one and seven tenths (41.7) feet to a point; thence Southerly seventy one and five tenths (71.5) feet to the point of beginning.

This conveyance is made subject to a right of way over the Westerly portion of the above described premises.

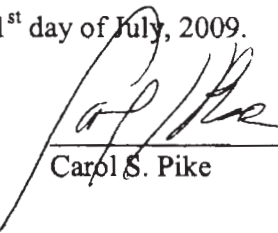
Being the same premises as described in a deed from Citicorp Mortgage, inc. to Carol S. Pike dated June 10, 1996 and recorded in the Cumberland County Registry of Deeds in Book 12557, Page 204.

The premises are conveyed together with and subject to any and all easements or appurtenances of record, insofar as the same are in force and applicable.

WITNESS my hand(s) and seal(s) this 31<sup>st</sup> day of July, 2009.

Received  
Recorded Register of Deeds  
Aug 04, 2009 11:02:36A  
Cumberland County  
Pamela E. Lovley

Witness 

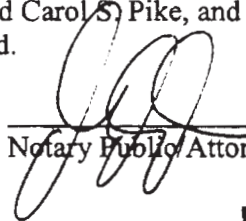
  
\_\_\_\_\_  
Carol S. Pike

STATE OF MAINE  
COUNTY OF Cumberland, ss.

July 31<sup>st</sup>, 2009

Personally appeared the above-named Carol S. Pike, and acknowledged the foregoing instrument to be her free act and deed.

Before me,

  
\_\_\_\_\_  
Notary Public, Attorney-at-Law

**JENNIFER J. JIPSON**  
**NOTARY PUBLIC, STATE OF MAINE**  
**MY COMMISSION EXPIRES**  
**JULY 13, 2014**

**EXHIBIT A**  
**97 Cumberland Avenue, Portland, Maine**

**A certain lot or parcel of land, with the buildings thereon, situated on the northwesterly side of Cumberland Avenue in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:**

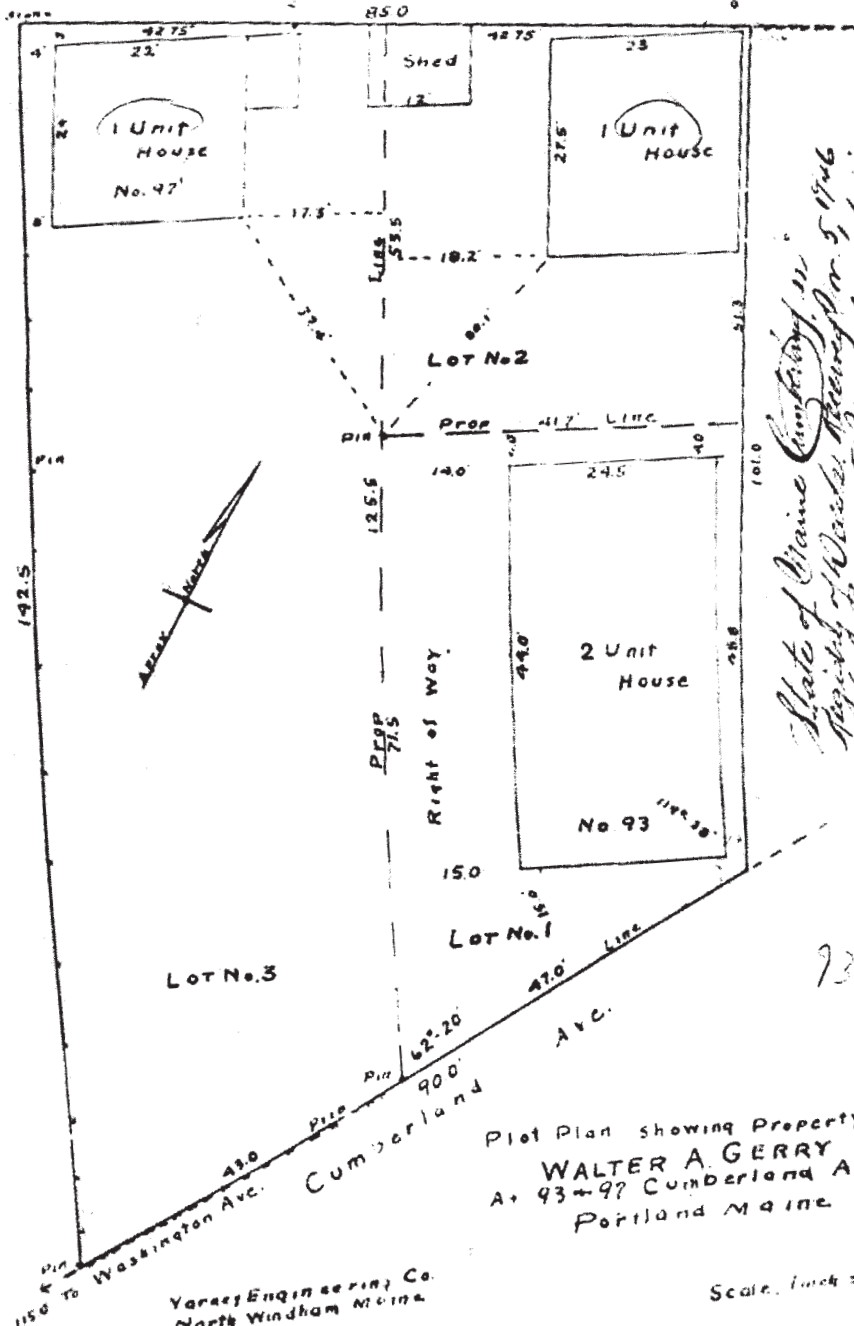
**Beginning at an iron pin set in the ground at the southwesterly corner of lot numbered three (3) as shown on a certain plot plan of property of Walter A. Gerry at 93 and 97 Cumberland Avenue, Portland, Maine as drawn by Varney Engineering Company, North Windham, Maine, October 8, 1946, a copy of which plot plan is recorded in the Cumberland County Registry of Deeds in Plan Book 32, Page 28, and reference to which plot plan is hereby made for more particular description of the premises hereby conveyed: thence northeasterly by Cumberland Avenue forty-three (43) feet to another iron pin set in the ground at the point where lot numbered three (3) and lot numbered one (1) meet; thence northwesterly by the line of lot numbered one (1) one hundred twenty-five and six tenths (125.6) feet to land formerly of Homan; thence westerly by said Homan land forty-two and seventy-five hundredths (42.75) feet to a stake; thence southeasterly one hundred forty-seven and five tenths (147.5) feet to Cumberland Avenue at the point of beginning; being lot numbered three (3) as shown on said plan.**

**Together with a right of way over, along and upon said lot numbered one (1) as shown on said plot plan, easterly of and adjacent to the premises herein conveyed.**

**Being the same premises conveyed by warranty deed from Edna L. Granholm to Robert A. Arnold and Thuong Arnold dated March 31, 1976 and recorded in the Cumberland County Registry of Deeds in Book 3827, Page 149.**

Received  
Recorded Register of Deeds  
May 05, 2006 02:38:13P  
Cumberland County  
John B O'Brien

Range 31



*State of Maine Comptroler in  
 Agency of Walter Gerry for 5, 1946  
 Vol. 1, p. 25 on C.M. and hereby in  
 Plan Book 32 Page 28.  
 Attest: C. M. ...*

93 F.H.

Plot Plan showing Property of  
**WALTER A. GERRY**  
 At 93-97 Cumberland Ave.  
 Portland Maine

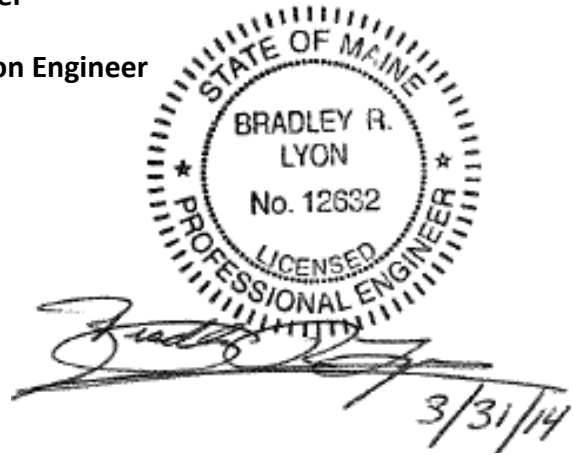
Yarney Engineering Co.  
 North Windham Maine  
 Oct. 8 1946

Scale, 1 inch = 10 feet

## Traffic Analysis

## Memorandum

**To:** Steven A. Groves, CPSWQ, Sr. Design Engineer  
**From:** Bradley R. Lyon, P.E., PTOE, Sr. Transportation Engineer  
**Date:** March 31<sup>st</sup>, 2014  
**Project #:** 14073  
**Subject:** 97 Cumberland Avenue, Portland, Maine



The proposed development of 97 Cumberland Avenue in Portland, Maine is located between Washington Avenue and Romasco Lane. It is our understanding that this development is proposed to be a 3 story, 5 unit apartment building. Per your request, we have reviewed the proposed trip generation as well as existing crash data provided to us by MaineDOT near the vicinity of the site.

### Trip Generation

Proposed trip generation has been calculated utilizing the 7<sup>th</sup> Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual for Land Use Code (LUC) 223, Mid-Rise Apartment. Table 1, below, summarizes the calculations.

**Table 1**  
**Proposed Trip Generation**  
**Land Use Code 223, Mid-Rise Apartment**

By Units	Units	Rate (Trips / Dwelling Unit)	Total Trips
Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 AM	5	0.30	2
Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 PM	5	0.39	2
Weekday AM Peak Hour of Generator	5	0.35	2
Weekday PM Peak Hour of Generator	5	0.44	2

Overall, the proposed development will produce a very low volume of trips and therefore will not meet the minimum threshold of 100 peak hour trips and thus will not require a Traffic Movement Permit from the MaineDOT.

#### **Crash Data**

Crash data between 2010-2012 from the MaineDOT was reviewed in the project vicinity with no High Crash Locations (HCL's) being identified. HCL's are defined by MaineDOT as locations having a minimum of eight accidents in a three-year period and a critical rate factor greater than one. The crash summary reports as provided by MaineDOT have been attached at the end of this memorandum.

#### **Conclusions**

Based on our traffic assessment, we offer the following conclusions:

- The proposed development of 97 Cumberland Avenue in Portland, Maine will generate a very low volume of traffic, with 2 trips in the AM and PM peak hours and therefore will not require a Traffic Movement Permit from the MaineDOT.
- The immediate project vicinity was reviewed and found to not be a High Crash Location using the latest three year period as provided by the MaineDOT (2010-2012).

#### **Enclosures**

1. MaineDOT Crash Summary Reports

# Crash Summary Report

## Report Selections and Input Parameters

### REPORT SELECTIONS

- Crash Summary I - Single Node
- Section Detail
- Crash Summary II
- 1320 Public
- 1320 Private
- 1320 Summary

### REPORT DESCRIPTION

Romasco Ln. @ Cumberland Ave.

### REPORT PARAMETERS

Year 2010, Start Month 1 through Year 2012 End Month: 12

Route: 0560428

Start Node: 18873

Start Offset: 0

Exclude First Node

End Node: 18873

End Offset: 0

Exclude Last Node



## Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	K	A	B	C	PD	Injury Crashes	Percent Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18873	0560428 - 0	Int of CUMBERLAND AV ROMASCO ST	2	0	0	0	0	0	0	0	1.392	0.00	0.49	0.00
												<small>Statewide Crash Rate: 0.14</small>		
Study Years: 3.00			NODE TOTALS:											
			0	0	0	0	0	0	0	0	1.392	0.00	0.49	0.00

## Crash Summary II - Characteristics

### Crashes by Day and Hour

Day of Week	Hour of Day												Un	Tot												
	AM						PM																			
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11		
SUNDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MONDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TUESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEDNESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THURSDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FRIDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SATURDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	0	23-Bicyclist	0
2-(Sport) Utility Vehicle	0	24-Witness	0
3-Passenger Van	0	25-Other	0
4-Cargo Van (10K lbs or Less)	0	Total	0
5-Pickup	0		
6-Motor Home	0		
7-School Bus	0		
8-Transit Bus	0		
9-Motor Coach	0		
10-Other Bus	0		
11-Motorcycle	0		
12-Moped	0		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	0		
17-Medium/Heavy Trucks (More than 10,000 lbs)	0		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	0		

## Crash Summary II - Characteristics

### Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	0	0	0	0	0	0	0
Ran Off Roadway	0	0	0	0	0	0	0
Failed to Yield Right-of-Way	0	0	0	0	0	0	0
Ran Red Light	0	0	0	0	0	0	0
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	0	0	0	0	0	0	0
Improper Turn	0	0	0	0	0	0	0
Improper Backing	0	0	0	0	0	0	0
Improper Passing	0	0	0	0	0	0	0
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	0	0	0	0	0	0	0
Failed to Keep in Proper Lane	0	0	0	0	0	0	0
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	0	0	0	0	0	0	0
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	0	0	0	0	0	0	0
Other Contributing Action	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	0	0	0	0	0	0	0
Physically Impaired or Handicapped	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	0	0	0	0	0	0
10-14	0	0	0	0	0	0
15-19	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-39	0	0	0	0	0	0
40-49	0	0	0	0	0	0
50-59	0	0	0	0	0	0
60-69	0	0	0	0	0	0
70-79	0	0	0	0	0	0
80-Over	0	0	0	0	0	0
Unknown	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Crash Summary II - Characteristics

Most Harmful Event		
Most Harmful Event	Total	Total
1-Overturn / Rollover	0	0
2-Fire / Explosion	0	0
3-Immersion	0	0
4-Jackknife	0	0
5-Cargo / Equipment Loss Or Shift	0	0
6-Fell / Jumped from Motor Vehicle	0	0
7-Thrown or Falling Object	0	0
8-Other Non-Collision	0	0
9-Pedestrian	0	0
10-Pedalcycle	0	0
11-Railway Vehicle - Train, Engine	0	0
12-Animal	0	0
13-Motor Vehicle in Transport	0	0
14-Parked Motor Vehicle	0	0
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0	0
16-Work Zone / Maintenance Equipment	0	0
17-Other Non-Fixed Object	0	0
18-Impact Attenuator / Crash Cushion	0	0
19-Bridge Overhead Structure	0	0
20-Bridge Pier or Support	0	0
21-Bridge Rail	0	0
22-Cable Barrier	0	0
23-Culvert	0	0
24-Curb	0	0
25-Ditch	0	0
26-Embankment	0	0
27-Guardrail Face	0	0
28-Guardrail End	0	0
29-Concrete Traffic Barrier	0	0
30-Other Traffic Barrier	0	0
31-Tree (Standing)	0	0
32-Utility Pole / Light Support	0	0
33-Traffic Sign Support	0	0
34-Traffic Signal Support	0	0
35-Fence	0	0
36-Mailbox	0	0
37-Other Post Pole or Support	0	0

Most Harmful Event		
Most Harmful Event	Total	Total
1-Overturn / Rollover	0	0
2-Fire / Explosion	0	0
3-Immersion	0	0
4-Jackknife	0	0
5-Cargo / Equipment Loss Or Shift	0	0
6-Fell / Jumped from Motor Vehicle	0	0
7-Thrown or Falling Object	0	0
8-Other Non-Collision	0	0
9-Pedestrian	0	0
10-Pedalcycle	0	0
11-Railway Vehicle - Train, Engine	0	0
12-Animal	0	0
13-Motor Vehicle in Transport	0	0
14-Parked Motor Vehicle	0	0
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0	0
16-Work Zone / Maintenance Equipment	0	0
17-Other Non-Fixed Object	0	0
18-Impact Attenuator / Crash Cushion	0	0
19-Bridge Overhead Structure	0	0
20-Bridge Pier or Support	0	0
21-Bridge Rail	0	0
22-Cable Barrier	0	0
23-Culvert	0	0
24-Curb	0	0
25-Ditch	0	0
26-Embankment	0	0
27-Guardrail Face	0	0
28-Guardrail End	0	0
29-Concrete Traffic Barrier	0	0
30-Other Traffic Barrier	0	0
31-Tree (Standing)	0	0
32-Utility Pole / Light Support	0	0
33-Traffic Sign Support	0	0
34-Traffic Signal Support	0	0
35-Fence	0	0
36-Mailbox	0	0
37-Other Post Pole or Support	0	0

Injury Data		
Severity Code	Injury Crashes	Number Of Injuries
K	0	0
A	0	0
B	0	0
C	0	0
PD	0	0
<b>Total</b>	<b>0</b>	<b>0</b>

Road Character		Total
Road Grade		Total
1-Level		0
2-On Grade		0
3-Top of Hill		0
4-Bottom of Hill		0
5-Other		0
<b>Total</b>		<b>0</b>

Light		Total
Light Condition		Total
1-Daylight		0
2-Dawn		0
3-Dusk		0
4-Dark - Lighted		0
5-Dark - Not Lighted		0
6-Dark - Unknown Lighting		0
7-Unknown		0
<b>Total</b>		<b>0</b>

Crashes by Year and Month

Month	2010	2011	2012	Total
JANUARY	0	0	0	0
FEBRUARY	0	0	0	0
MARCH	0	0	0	0
APRIL	0	0	0	0
MAY	0	0	0	0
JUNE	0	0	0	0
JULY	0	0	0	0
AUGUST	0	0	0	0
SEPTEMBER	0	0	0	0
OCTOBER	0	0	0	0
NOVEMBER	0	0	0	0
DECEMBER	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Report is limited to the last 10 years of data.

# Crash Summary II - Characteristics

## Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End / Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Head-on / Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intersection Movement	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submerston	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Blowing Sand, Soil, Dirt</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Blowing Snow</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Clear</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cloudy</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Fog, Smog, Smoke</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Other</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Rain</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Severe Crosswinds</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Maine Department Of Transportation - Traffic Engineering, Crash Records Section  
**Crash Summary II - Characteristics**

**Crashes by Weather, Light Condition and Road Surface**

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Sleet, Hail (Freezing Rain or Drizzle)</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Snow</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Crash Summary Report

## Report Selections and Input Parameters

### REPORT SELECTIONS

- Crash Summary I - Single Node
- Section Detail
- Crash Summary II
- 1320 Public
- 1320 Private
- 1320 Summary

### REPORT DESCRIPTION

Cumberland Ave. @ Washington Ave

### REPORT PARAMETERS

Year 2010, Start Month 1 through Year 2012 End Month: 12

Route: 0026X

Start Node: 19042

End Node: 19042

Start Offset: 0

End Offset: 0

Exclude First Node

Exclude Last Node

## Crash Summary I

### Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	K	A	B	C	PD	Injury Ent-Veh	Percent Annual M	Crash Rate	Critical Rate	CRF	
19042	0026X - 0	Int of CUMBERLAND AV WASHINGTON AV	9	12	0	0	1	3	8	33.3	4.890	0.82	1.14	0.00	
Study Years: 3.00												Statewide Crash Rate: 0.64	0.82	1.14	0.71
NODE TOTALS:				12	0	0	1	3	8	33.3	4.890	0.82	1.14	0.71	



## Crash Summary II - Characteristics

### Crashes by Day and Hour

Day Of Week	Hour of Day												Un	Tot													
	AM						PM																				
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11			
SUNDAY	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3	
MONDAY	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
TUESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
WEDNESDAY	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
THURSDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	3
FRIDAY	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SATURDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Totals</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>12</b>	

### Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	15	23-Bicyclist	1
2-(Sport) Utility Vehicle	3	24-Witness	5
3-Passenger Van	2	25-Other	0
4-Cargo Van (10K lbs or Less)	0	<b>Total</b>	<b>28</b>
5-Pickup	1		
6-Motor Home	0		
7-School Bus	0		
8-Transit Bus	0		
9-Motor Coach	0		
10-Other Bus	0		
11-Motorcycle	0		
12-Moped	0		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	0		
17-Medium/Heavy Trucks (More than 10,000 lbs)	1		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	0		

## Crash Summary II - Characteristics

### Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	2	4	0	0	0	0	6
Ran Off Roadway	0	0	0	0	0	0	0
Failed to Yield Right-of-Way	0	2	0	0	0	0	2
Ran Red Light	0	0	0	0	0	0	0
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	1	0	0	0	0	0	1
Drove Too Fast For Conditions	2	0	0	0	0	0	2
Improper Turn	0	0	0	0	0	0	0
Improper Backing	0	0	0	0	0	0	0
Improper Passing	1	0	0	0	0	0	1
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	0	1	0	0	0	0	1
Failed to Keep in Proper Lane	0	0	0	0	0	0	0
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	0	0	0	0	0	0	0
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	0	0	0	0	0	0	0
Other Contributing Action	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0
<b>Total</b>	<b>6</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>

### Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	11	10	0	0	0	1	22
Physically Impaired or Handicapped	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>22</b>

### Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	0	0	0	0	0	0
10-14	0	0	0	0	0	0
15-19	1	0	0	0	0	1
20-24	2	0	0	0	0	2
25-29	5	0	0	0	0	5
30-39	6	0	0	0	0	6
40-49	3	0	0	0	0	3
50-59	3	0	0	0	0	3
60-69	0	0	0	0	0	0
70-79	1	0	0	0	0	1
80-Over	0	0	0	0	0	0
Unknown	1	1	0	0	0	2
<b>Total</b>	<b>22</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>

## Crash Summary II - Characteristics

Most Harmful Event			
Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	0	38-Other Fixed Object (wall, building, tunnel, etc.)	0
2-Fire / Explosion	0	39-Unknown	0
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	Total	10
6-Fell / Jumped from Motor Vehicle	0		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	0		
10-Pedalcycle	1		
11-Railway Vehicle - Train, Engine	0		
12-Animal	0		
13-Motor Vehicle in Transport	9		
14-Parked Motor Vehicle	0		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0		
16-Work Zone / Maintenance Equipment	0		
17-Other Non-Fixed Object	0		
18-Impact Attenuator / Crash Cushion	0		
19-Bridge Overhead Structure	0		
20-Bridge Pier or Support	0		
21-Bridge Rail	0		
22-Cable Barrier	0		
23-Culvert	0		
24-Curb	0		
25-Ditch	0		
26-Embankment	0		
27-Guardrail Face	0		
28-Guardrail End	0		
29-Concrete Traffic Barrier	0		
30-Other Traffic Barrier	0		
31-Tree (Standing)	0		
32-Utility Pole / Light Support	0		
33-Traffic Sign Support	0		
34-Traffic Signal Support	0		
35-Fence	0		
36-Mailbox	0		
37-Other Post Pole or Support	0		

Injury Data			
Severity Code	Injury Crashes	Number Of Injuries	
K	0	0	
A	0	0	
B	1	1	
C	3	3	
PD	8	0	
Total	12	4	

Road Character		Total
Road Grade		
1-Level		9
2-On Grade		2
3-Top of Hill		0
4-Bottom of Hill		1
5-Other		0
Total		12

Light		Total
Light Condition		
1-Daylight		6
2-Dawn		0
3-Dusk		0
4-Dark - Lighted		6
5-Dark - Not Lighted		0
6-Dark - Unknown Lighting		0
7-Unknown		0
Total		12

Traffic Control Devices		Total
Traffic Control Device		
1-Traffic Signals (Stop & Go)		10
2-Traffic Signals (Flashing)		2
3-Advisory/Warning Sign		0
4-Stop Signs - All Approaches		0
5-Stop Signs - Other		0
6-Yield Sign		0
7-Curve Warning Sign		0
8-Officer, Flagman, School Patrol		0
9-School Bus Stop Arm		0
10-School Zone Sign		0
11-R.R. Crossing Device		0
12-No Passing Zone		0
13-None		0
14-Other		0
Total		12

## Crash Summary II - Characteristics

Crashes by Year and Month

Month	2010	2011	2012	Total
JANUARY	0	1	0	1
FEBRUARY	2	0	1	3
MARCH	0	0	0	0
APRIL	0	0	0	0
MAY	0	0	0	0
JUNE	0	0	2	2
JULY	1	0	0	1
AUGUST	0	0	1	1
SEPTEMBER	0	0	0	0
OCTOBER	1	1	0	2
NOVEMBER	0	0	0	0
DECEMBER	1	0	1	2
<b>Total</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>12</b>

Report is limited to the last 10 years of data.

# Crash Summary II - Characteristics

## Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End / Sideswipe	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Head-on / Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intersection Movement	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	0	0	0	1	0	0	0	0	0	0	0	0	0	1
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>



# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Blowing Sand, Soil, Dirt</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Blowing Snow</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Clear</b>												
Dark - Lighted	2	0	0	0	0	0	0	0	0	0	0	2
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	5	0	0	0	0	0	0	0	0	0	0	5
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cloudy</b>												
Dark - Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Light</b>												
<b>Fog, Smog, Smoke</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Other</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Rain</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	2	2
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	1	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Severe Crosswinds</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Sleet, Hail (Freezing Rain or Drizzle)</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Snow</b>												
Dark - Lighted	0	0	0	0	0	0	0	1	0	0	0	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>

## Crash Summary Report

### Report Selections and Input Parameters

#### REPORT SELECTIONS

- Crash Summary I - Single Element       Section Detail       Crash Summary II       1320 Public       1320 Private       1320 Summary

#### REPORT DESCRIPTION

link

#### REPORT PARAMETERS

Year 2010, Start Month 1 through Year 2012 End Month: 12

Route: 0561238

Start Node: 19042

Start Offset: 0

Exclude First Node

End Node: 18873

End Offset: 0

Exclude Last Node



## Crash Summary I

### Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	A	B	C	PD	Injury Crashes	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18873	19042	194519	0 - 0.07	0561238 - 1.04 <a href="#">RD INV 05 61238</a>	0.07	1	0	0	0	0	1	0	0.0	0.00096	347.53	1043.65	0.00
<a href="#">Int of CUMBERLAND AV ROMASCO ST</a>																	
Study Years: 3.00      Section Totals:      0.07      1      0      0      0      1      0.0      0.00096      347.53      1043.64      0.33																	

Statewide Crash Rate: 336.50

## Crash Summary

### Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes			Crash Report	Crash Date	Crash Mile Point	Injury Degree	
						K	A	B C PD					
18873	19042	194519	0 - 0.07	0561238 - 1.04	1	0	0	0	1	2012-45905	12/02/2012	1.05	PD
Totals:					1	0	0	0	1				

Maine Department Of Transportation - Traffic Engineering, Crash Records Section  
**Crash Summary II - Characteristics**

Crashes by Day and Hour

Day of Week	Hour of Day												Un	Tot													
	AM						PM																				
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11			
SUNDAY	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
MONDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TUESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEDNESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THURSDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FRIDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SATURDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	1	23-Bicyclist	0
2-(Sport) Utility Vehicle	0	24-Witness	0
3-Passenger Van	0	25-Other	0
4-Cargo Van (10K lbs or Less)	0	<u>Total</u>	<u>1</u>
5-Pickup	0		
6-Motor Home	0		
7-School Bus	0		
8-Transit Bus	0		
9-Motor Coach	0		
10-Other Bus	0		
11-Motorcycle	0		
12-Moped	0		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	0		
17-Medium/Heavy Trucks (More than 10,000 lbs)	0		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	0		

## Crash Summary II - Characteristics

### Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	1	0	0	0	0	0	1
Ran Off Roadway	0	0	0	0	0	0	0
Failed to Yield Right-of-Way	0	0	0	0	0	0	0
Ran Red Light	0	0	0	0	0	0	0
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	0	0	0	0	0	0	0
Improper Turn	0	0	0	0	0	0	0
Improper Backing	0	0	0	0	0	0	0
Improper Passing	0	0	0	0	0	0	0
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	0	0	0	0	0	0	0
Failed to Keep in Proper Lane	0	0	0	0	0	0	0
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	0	0	0	0	0	0	0
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	0	0	0	0	0	0	0
Other Contributing Action	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

### Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	1	0	0	0	0	0	1
Physically Impaired or Handicapped	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

### Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	0	0	0	0	0	0
10-14	0	0	0	0	0	0
15-19	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-39	0	0	0	0	0	0
40-49	1	0	0	0	0	1
50-59	0	0	0	0	0	0
60-69	0	0	0	0	0	0
70-79	0	0	0	0	0	0
80-Over	0	0	0	0	0	0
Unknown	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

## Crash Summary II - Characteristics

Most Harmful Event			
Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	0	38-Other Fixed Object (wall, building, tunnel, etc.)	0
2-Fire / Explosion	0	39-Unknown	0
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	Total	1
6-Fell / Jumped from Motor Vehicle	0		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	0		
10-Pedalcycle	0		
11-Railway Vehicle - Train, Engine	0		
12-Animal	0		
13-Motor Vehicle in Transport	0		
14-Parked Motor Vehicle	1		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0		
16-Work Zone / Maintenance Equipment	0		
17-Other Non-Fixed Object	0		
18-Impact Attenuator / Crash Cushion	0		
19-Bridge Overhead Structure	0		
20-Bridge Pier or Support	0		
21-Bridge Rail	0		
22-Cable Barrier	0		
23-Culvert	0		
24-Curb	0		
25-Ditch	0		
26-Embankment	0		
27-Guardrail Face	0		
28-Guardrail End	0		
29-Concrete Traffic Barrier	0		
30-Other Traffic Barrier	0		
31-Tree (Standing)	0		
32-Utility Pole / Light Support	0		
33-Traffic Sign Support	0		
34-Traffic Signal Support	0		
35-Fence	0		
36-Mailbox	0		
37-Other Post Pole or Support	0		

Injury Data			
Severity Code	Injury Crashes	Number Of Injuries	
K	0	0	
A	0	0	
B	0	0	
C	0	0	
PD	1	0	
Total	1	0	

Road Character		Total
Road Grade		
1-Level		1
2-On Grade		0
3-Top of Hill		0
4-Bottom of Hill		0
5-Other		0
Total		1

Light		Total
Light Condition		
1-Daylight		0
2-Dawn		0
3-Dusk		0
4-Dark - Lighted		0
5-Dark - Not Lighted		0
6-Dark - Unknown Lighting		1
7-Unknown		0
Total		1

Traffic Control Devices		Total
Traffic Control Device		
1-Traffic Signals (Stop & Go)		0
2-Traffic Signals (Flashing)		0
3-Advisory/Warning Sign		0
4-Stop Signs - All Approaches		0
5-Stop Signs - Other		0
6-Yield Sign		0
7-Curve Warning Sign		0
8-Officer, Flagman, School Patrol		0
9-School Bus Stop Arm		0
10-School Zone Sign		0
11-R.R. Crossing Device		0
12-No Passing Zone		0
13-None		1
14-Other		0
Total		1



**Crash Summary II - Characteristics****Crashes by Year and Month**

Month	2010	2011	2012	Total
JANUARY	0	0	0	0
FEBRUARY	0	0	0	0
MARCH	0	0	0	0
APRIL	0	0	0	0
MAY	0	0	0	0
JUNE	0	0	0	0
JULY	0	0	0	0
AUGUST	0	0	0	0
SEPTEMBER	0	0	0	0
OCTOBER	0	0	0	0
NOVEMBER	0	0	0	0
DECEMBER	0	0	1	1
<b>Total</b>	0	0	1	1

Report is limited to the last 10 years of data.

# Crash Summary II - Characteristics

## Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End / Sideswipe	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Head-on / Sideswipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intersection Movement	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Blowing Sand, Soil, Dirt</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Blowing Snow</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Clear</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cloudy</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Fog, Smog, Smoke</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Other</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Rain</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Severe Crosswinds</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

# Crash Summary II - Characteristics

## Crashes by Weather, Light Condition and Road Surface

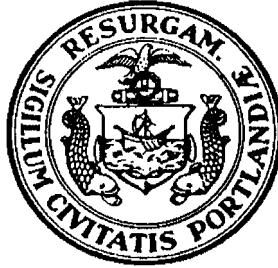
Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
<b>Sleet, Hail (Freezing Rain or Drizzle)</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	1	0	0	0	0	0	0	0	0	0	1
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Snow</b>												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>



## **Waste Water Capacity Application**

# CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,  
55 Portland Street,  
Portland, Maine 04101-2991



Mr. Frank J. Brancely,  
Senior Engineering Technician  
Phone #: (207) 874-8832,  
Fax #: (207) 874-8852,  
E-  
mail: fjb@portlandmaine.gov

Date: 3/17/14

## 1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 97 Cumberland Ave

*(Regarding addressing, please contact Leslie Kaynor, either at 756-8346, or at LMK@portlandmaine.gov)*

Chart Block Lot Number: \_\_\_\_\_

Proposed Use: 5-Unit Residential Building

Previous Use: Single Family -7 bedroom

Existing Sanitary Flows: 270 to 360 gpd

Existing Process Flows: None

Description and location of City sewer, at  
proposed building sewer lateral connection:

See previously attached plans

Site Category	Commercial	_____
	Industrial <i>(complete part 4 below)</i>	_____
	Governmental	_____
	Residential	<u>X</u>
	Other <i>(specify)</i>	_____

*Clearly, indicate the proposed connection, on the submitted plans.*

## 2. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 5-units with total 7 bedrooms 630 GPD

Peaking Factor/ Peak Times: Peaking Factor 7 assume 6-8:30am and 5-9:00pm

Specify the source of design guidelines: *(i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)*

**Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.**

## 3. Please, Submit Contact Information.

Owner/Developer Name: Mr. Peter Dugus

Owner/Developer Address: 243 State Street

Phone: 207-899-2409 Fax: \_\_\_\_\_ E-mail: dugas3@gmail.com

Engineering Consultant Name: Sebago Technics, Inc.

Engineering Consultant Address: Suite 1A 75 John Roberts Rd. South Portland

Phone: 200-2064 Fax: 856-2206 E-mail: \_\_\_\_\_

City Planner's Name: Barbara Barhydt Phone: 207 874 8699

**Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.**

**4. Please, Submit Industrial Process Wastewater Flow Calculations**

Estimated Industrial Process Wastewater Flows Generated:   N/A   GPD

Do you currently hold Federal or State discharge permits? Yes  No

Is the process wastewater termed categorical under CFR 40? Yes  No

OSHA Standard Industrial Code (SIC): (<http://www.osha.gov/oshstats/sicser.html>)

Peaking Factor/Peak Process Times: \_\_\_\_\_

**Note: On the submitted plans, please show the locations, where the building's sanitary, and process water sewer laterals, exit the facility, where they enter the city's sewer, the location of any control manholes, wet wells, or other access points, and the locations of any filters, strainers, or grease traps.**

**Notes, Comments, or Calculations:**

---

Daily Flow Rate:

$$90\text{gpd} \times 7 \text{ bedroom} = 630\text{gpd}$$

Peak Flow Rate:

$$630 / (24\text{hrs} \times 60\text{m}) = 0.44\text{gpm} \times 7(\text{peaking factor}) = 3.1\text{gpm}$$



## **Storm Water Management Plan**





# **STORMWATER MANAGEMENT PLAN**

**for**

**97 Cumberland Avenue  
Portland, Maine**

prepared for

Peter Dugas  
243 State Street  
Portland, ME 04101

March 2014

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## STORMWATER MANAGEMENT PLAN

97 Cumberland Avenue  
Portland, Maine

### I. Introduction

This Stormwater Management Plan has been prepared to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan have been designed based on commonly accepted engineering methods and to comply with applicable regulatory requirements.

### II. Existing Conditions

The site is located at 97 Cumberland Avenue and behind the 7-Eleven Convenience Store on Washington Ave. The lot has been occupied as a residential house for many years until it was recently demolished due to the declining condition of the structure. The pre-existing home was located in the far northwest corner of the lot. The home was accessed from an existing gravel driveway which is also shared by 93-95 Cumberland Ave. The land cover is mostly lawn and driveway. The topography slopes steeply from east to west towards 7-Eleven. The only other vegetation is evasive plants growing along the fence & retaining wall separating parcel from the 7-Eleven.

#### A. Surface Water Features

There is no surface water features.

#### B. Site Topography

The topography slopes steeply at 20% to 30% from east to west at the southerly end and moderately at 3% to 6% central portion of the site. The existing driveway slopes 12% away from Cumberland Ave.

#### C. Soils

Soil characteristics were obtained from the Soil Conservation Service (SCS) Medium Intensity Soil Survey of Cumberland County. Soils identified on the site are identified below in Table 1. These soil boundaries have been identified on the attached Watershed Maps.

Table 1 – Proximity Soil Types and Characteristics		
Soil Type	Symbol	HSG
Hinckley gravelly Sandy Loam		A

The hydrologic soil group (HSG) designation is based on a rating of the relative permeability of a soil, with Group “A” being extremely permeable such as coarse sand, to Group “D” having low permeability such as clay.

D. Historic Flooding

There are no apparent flooding problems associated with this site. Additionally, the Federal Emergency Management Agency (FEMA) has not identified a flood hazard area on the project site.

III. Proposed Development

The applicant plans to construct a new 5-Unit residential building. Associated work will include a new paved access drive, concrete block retaining wall and an Infiltration Basin.

A. Alterations to Land Cover

The proposed development will include a new three story residential building with five living units. The proposed development includes an approximately 2,900 sf of new impervious area footprint including 1,790 for the building footprint and 1,110 sf of driveway.

V. Regulatory Requirements

A. City of Portland, Maine

This project is required to meet Chapter 500 standards to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including Basic, General and Flooding standards:

The Stormwater standards will require treatment for runoff from the new impervious area less the existing impervious (prior to November 2005). The net treatment area is approximately 2,280 sf.

**VI. Stormwater Management Best Management Practices (BMPs)**

Stormwater runoff from the project site will receive water quality treatment and attenuation of peak runoff management through the construction of stormwater BMPs consisting of an Infiltration Basin.

**A. Infiltration Basin**

The Infiltration Basin will receive stormwater runoff from the access driveway and off-site residential block area up to Romasco Lane (see enclosed watershed map). Stormwater runoff that is collected in Infiltration Basin will pond-up temporarily and filter through the soil media. In larger storms once the surface runoff exceeds basin capacity, runoff will discharge over a rip rap spillway. Overflow Stormwater runoff from the infiltration basin eventually will drain west across the adjacent to the parking lot to Washington Avenue storm drain system. This is similar to the pre-development drainage pattern.

**VII. Water Quality Analysis**

In accordance with City of Portland Technical Design Manual and Maine DEP Chapter 500 we have provided stormwater quality treatment. We have provided stormwater quality treatment for approximately 2,280 s.f. of impervious surfaces (See Attachment C for Calculations).

**VIII. Peak Flow Analysis**

In order to evaluate drainage characteristics as a result of the proposed development activities, a quantitative analysis was performed to determine peak rates of runoff for the 2, 10 and 25-year storms in the pre and post-development conditions. The evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was used to perform the calculations.

The results of the stormwater runoff calculations for the pre-development and post-development conditions are summarized in the tables below.

Pre-development vs. Post-development Peak Flow Summary at Sub-area 1 & Pond 1			
Reach 2	2-year Peak Flow (cfs)	10-year Peak Flow (cfs)	25-year Peak Flow (cfs)
Pre-development	0.45	1.03	1.33
Post-development	0.24	1.04	1.34
Change	-0.21	0.01	0.01


In order to mitigate peak flows and treat this expected increase, infiltration basin will be constructed. The infiltration basin will collect stormwater runoff and limit peak discharge rates to pre-development rates. There is a small decrease in the 2 year event where the majority of the storm events occur.


**IX. Conclusions**

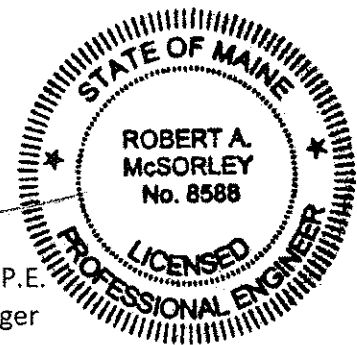
This Stormwater Management Plan has been designed with erosion and sedimentation controls, inspection and maintenance procedures and general housekeeping requirements to prevent unreasonable impacts to the surrounding environment and to provide a long-term plan for management of stormwater runoff from the site. Stormwater runoff should be adequately managed for the project if carried out in accordance with the design plans.

Prepared by,

SEBAGO TECHNICS, INC.

  
Steven A. Groves, CPSWQ  
Project Engineer

  
Robert A. McSorley, P.E.  
Senior Project Manager



4/1/14

SAG:sag/jsf

March 26, 2014





SCALE: 1" = 80'  
 DATE: 03/18/14

INFORMATION:  
 IMAGERY ACQUIRED SPRING 2012  
 GIS DATA FROM THE CITY OF PORTLAND  
 AND MAINE GIS

FOR:  
 PETER DUGAS

LOCATION:  
 97 CUMBERLAND AVENUE  
 PORTLAND, MAINE

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14073GIS.mxd



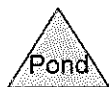
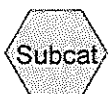
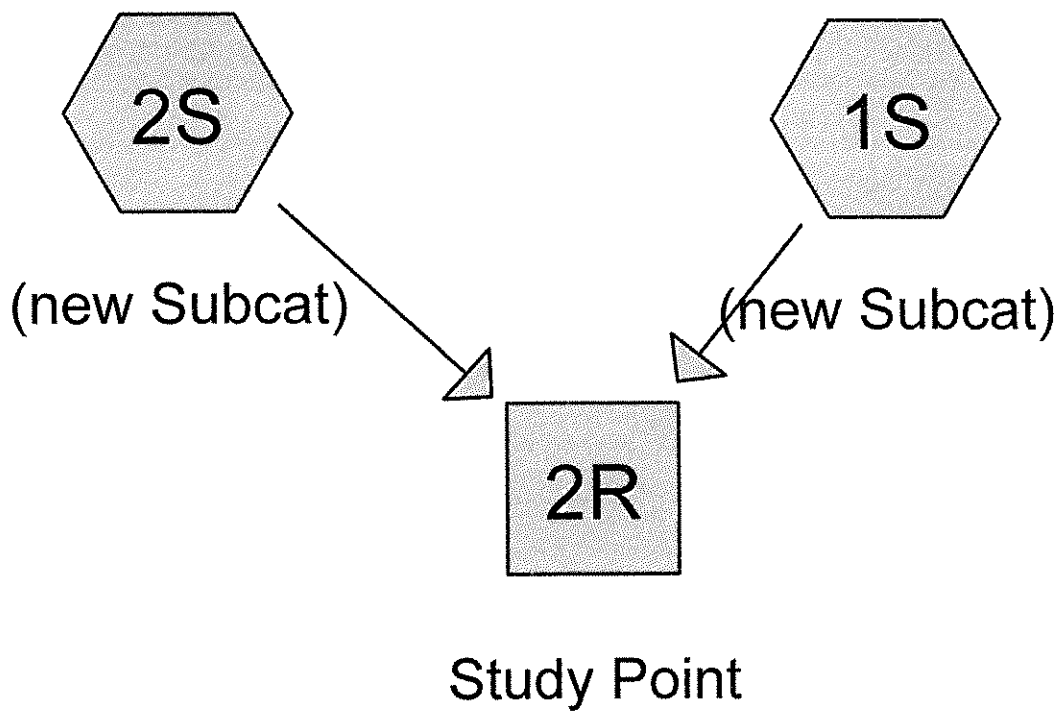


<b>SCALE:</b> 1" = 80' <b>DATE:</b> 03/18/14		<b>INFORMATION:</b> IMAGERY ACQUIRED SPRING 2012 GIS DATA FROM THE CITY OF PORTLAND AND MAINE GIS
<b>WATERSHED MAP</b> <b>OF 97 CUMBERLAND AVENUE</b>		<b>FOR:</b> PETER DUGAS
<b>LOCATION:</b> 97 CUMBERLAND AVENUE PORTLAND, MAINE		
<b>SEBAGO</b> T E C H N I C S <small>QUI, ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE</small> <a href="http://WWW.SEAGOTECHNICS.COM">WWW.SEAGOTECHNICS.COM</a>		75 John Roberts Rd. • Suite 1A South Portland, ME 04106 Tel. 207-200-2100

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# **Attachment A**

## **Hydrocad Output Pre- and Post-Development Tr-20 Model**



**14073-Pre-Development Watershed**

Type III 24-hr 2yr Rainfall=3.00"

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**Subcatchment 1S: (new Subcat)**

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.016 af, Depth&gt; 0.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2yr Rainfall=3.00"

Area (sf)	CN	Description
8,580	77	1/8 acre lots, 65% imp, HSG A
3,003		Pervious Area
5,577		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: (new Subcat)**

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.014 af, Depth&gt; 0.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2yr Rainfall=3.00"

Area (sf)	CN	Description
7,590	77	1/8 acre lots, 65% imp, HSG A
2,657		Pervious Area
4,934		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Reach 2R: Study Point**

Inflow Area = 0.371 ac, Inflow Depth > 0.98" for 2yr event  
 Inflow = 0.45 cfs @ 12.09 hrs, Volume= 0.030 af  
 Outflow = 0.45 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

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

**14073-Pre-Development Watershed**

Type III 24-hr 10yr Rainfall=4.70"

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**Subcatchment 1S: (new Subcat)**

Runoff = 0.55 cfs @ 12.08 hrs, Volume= 0.036 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
8,580	77	1/8 acre lots, 65% imp, HSG A
3,003		Pervious Area
5,577		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: (new Subcat)**

Runoff = 0.48 cfs @ 12.08 hrs, Volume= 0.032 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
7,590	77	1/8 acre lots, 65% imp, HSG A
2,657		Pervious Area
4,934		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Reach 2R: Study Point**

Inflow Area = 0.371 ac, Inflow Depth > 2.21" for 10yr event  
 Inflow = 1.03 cfs @ 12.08 hrs, Volume= 0.068 af  
 Outflow = 1.03 cfs @ 12.08 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min

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



**14073-Pre-Development Watershed**

Type III 24-hr 25yr Rainfall=5.50"

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**Subcatchment 1S: (new Subcat)**

Runoff = 0.70 cfs @ 12.08 hrs, Volume= 0.047 af, Depth&gt; 2.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25yr Rainfall=5.50"

Area (sf)	CN	Description
8,580	77	1/8 acre lots, 65% imp, HSG A
3,003		Pervious Area
5,577		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: (new Subcat)**

Runoff = 0.62 cfs @ 12.08 hrs, Volume= 0.041 af, Depth&gt; 2.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25yr Rainfall=5.50"

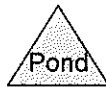
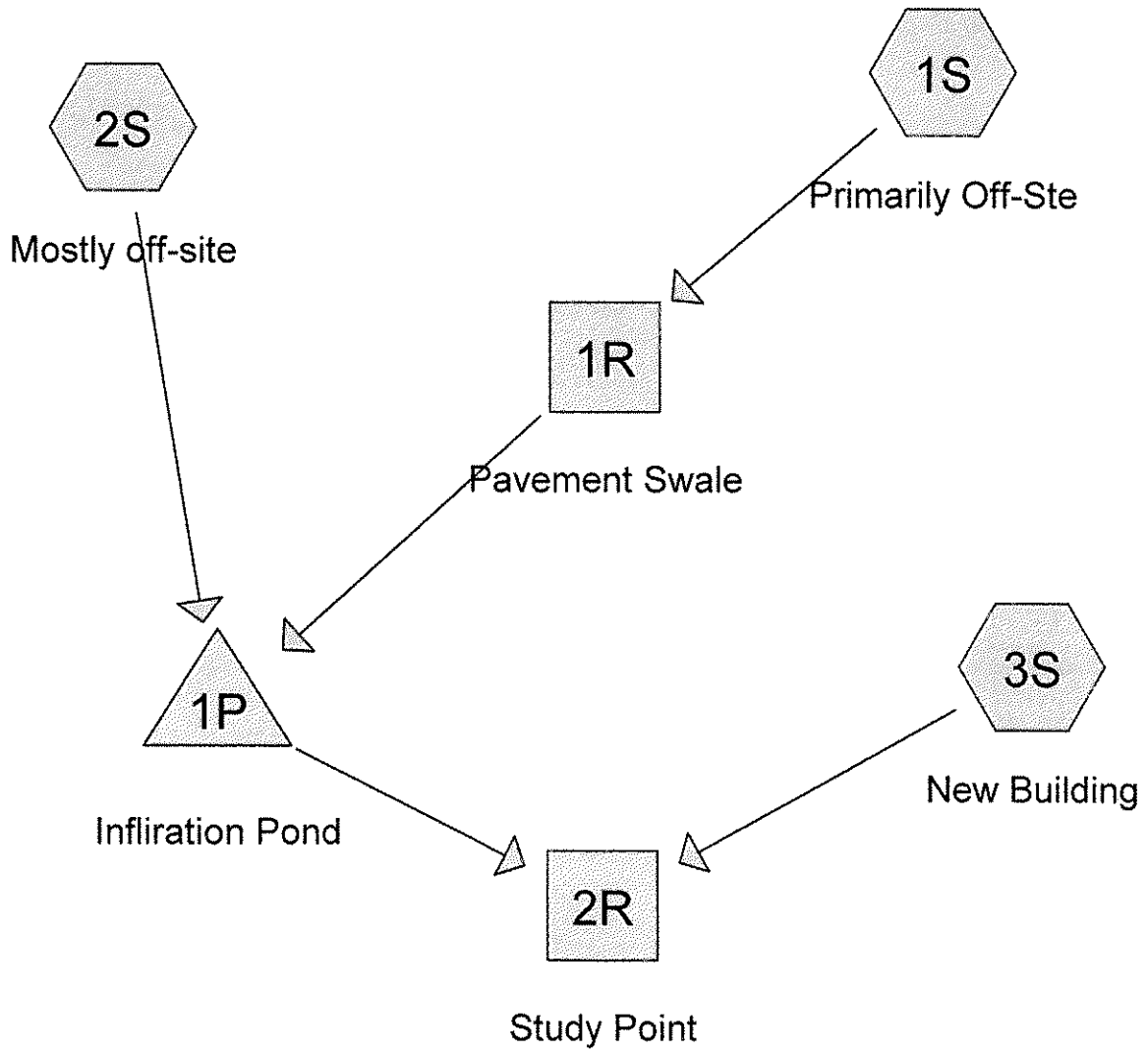
Area (sf)	CN	Description
7,590	77	1/8 acre lots, 65% imp, HSG A
2,657		Pervious Area
4,934		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Reach 2R: Study Point**

Inflow Area = 0.371 ac, Inflow Depth > 2.84" for 25yr event  
 Inflow = 1.33 cfs @ 12.08 hrs, Volume= 0.088 af  
 Outflow = 1.33 cfs @ 12.08 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

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



## 14073-Post-Development Watershed

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### Area Listing (all nodes)

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
0.022	39	>75% Grass cover, Good, HSG A (3S)
0.282	77	1/8 acre lots, 65% imp, HSG A (1S,2S)
0.067	98	Paved parking & roofs (3S)
<hr/>		
0.371		

**14073-Post-Development Watershed**

Type III 24-hr 2yr Rainfall=3.00"

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**Subcatchment 1S: Primarily Off-Ste**

Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.013 af, Depth&gt; 0.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 2yr Rainfall=3.00"

Area (sf)	CN	Description
6,704	77	1/8 acre lots, 65% imp, HSG A
2,346		Pervious Area
4,358		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: Mostly off-site**

Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.010 af, Depth&gt; 0.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 2yr Rainfall=3.00"

Area (sf)	CN	Description
5,590	77	1/8 acre lots, 65% imp, HSG A
1,957		Pervious Area
3,634		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 3S: New Building**

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.010 af, Depth&gt; 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 2yr Rainfall=3.00"

Area (sf)	CN	Description
2,900	98	Paved parking & roofs
945	39	>75% Grass cover, Good, HSG A
3,845	83	Weighted Average
945		Pervious Area
2,900		Impervious Area

**14073-Post-Development Watershed**

Type III 24-hr 2yr Rainfall=3.00"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

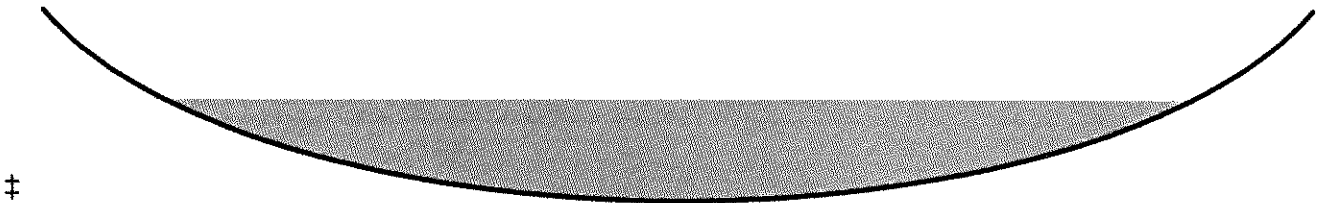
**Reach 1R: Pavement Swale**

Inflow Area = 0.154 ac, Inflow Depth > 0.98" for 2yr event  
 Inflow = 0.19 cfs @ 12.08 hrs, Volume= 0.013 af  
 Outflow = 0.19 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 3%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
 Max. Velocity= 1.23 fps, Min. Travel Time= 0.9 min  
 Avg. Velocity = 0.50 fps, Avg. Travel Time= 2.2 min

Peak Storage= 10 cf @ 12.09 hrs, Average Depth at Peak Storage= 0.05'  
 Bank-Full Depth= 0.10', Capacity at Bank-Full= 0.75 cfs

6.00' x 0.10' deep Parabolic Channel, n= 0.013 Asphalt, smooth  
 Length= 65.0' Slope= 0.0100 '/  
 Inlet Invert= 0.00', Outlet Invert= -0.65'



**Reach 2R: Study Point**

Inflow Area = 0.371 ac, Inflow Depth > 0.55" for 2yr event  
 Inflow = 0.24 cfs @ 12.24 hrs, Volume= 0.017 af  
 Outflow = 0.24 cfs @ 12.24 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs

**Pond 1P: Infiltration Pond**

Inflow Area = 0.282 ac, Inflow Depth > 0.98" for 2yr event  
 Inflow = 0.34 cfs @ 12.10 hrs, Volume= 0.023 af  
 Outflow = 0.19 cfs @ 12.25 hrs, Volume= 0.019 af, Atten= 46%, Lag= 9.4 min  
 Discarded = 0.02 cfs @ 12.25 hrs, Volume= 0.012 af  
 Primary = 0.17 cfs @ 12.25 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs / 4  
 Peak Elev= 84.57' @ 12.25 hrs Surf.Area= 325 sf Storage= 295 cf

Plug-Flow detention time= 114.1 min calculated for 0.019 af (81% of inflow)  
 Center-of-Mass det. time= 62.2 min ( 876.2 - 814.0 )

**14073-Post-Development Watershed**

Type III 24-hr 2yr Rainfall=3.00"

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Volume	Invert	Avail.Storage	Storage Description
#1	83.00'	453 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
83.00	60	0	0
84.00	220	140	140
85.00	405	313	453

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	<b>2.400 in/hr Exfiltration over Surface area</b>
#2	Primary	84.50'	<b>4.0' long x 4.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

**Discarded OutFlow** Max=0.02 cfs @ 12.25 hrs HW=84.57' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.17 cfs @ 12.25 hrs HW=84.57' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.17 cfs @ 0.62 fps)

**14073-Post-Development Watershed**

Type III 24-hr 10yr Rainfall=4.70"

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**Subcatchment 1S: Primarily Off-Ste**

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.028 af, Depth&gt; 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
6,704	77	1/8 acre lots, 65% imp, HSG A
2,346		Pervious Area
4,358		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: Mostly off-site**

Runoff = 0.37 cfs @ 12.08 hrs, Volume= 0.024 af, Depth&gt; 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
5,590	77	1/8 acre lots, 65% imp, HSG A
1,957		Pervious Area
3,634		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 3S: New Building**

Runoff = 0.31 cfs @ 12.08 hrs, Volume= 0.020 af, Depth&gt; 2.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
2,900	98	Paved parking & roofs
945	39	>75% Grass cover, Good, HSG A
3,845	83	Weighted Average
945		Pervious Area
2,900		Impervious Area



# 14073-Post-Development Watershed

Type III 24-hr 10yr Rainfall=4.70"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

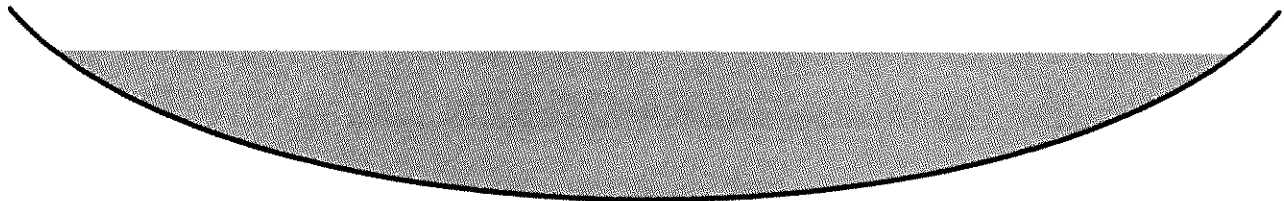
## Reach 1R: Pavement Swale

Inflow Area = 0.154 ac, Inflow Depth > 2.21" for 10yr event  
Inflow = 0.44 cfs @ 12.08 hrs, Volume= 0.028 af  
Outflow = 0.43 cfs @ 12.10 hrs, Volume= 0.028 af, Atten= 3%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Max. Velocity= 1.59 fps, Min. Travel Time= 0.7 min  
Avg. Velocity = 0.59 fps, Avg. Travel Time= 1.8 min

Peak Storage= 18 cf @ 12.09 hrs, Average Depth at Peak Storage= 0.08'  
Bank-Full Depth= 0.10', Capacity at Bank-Full= 0.75 cfs

6.00' x 0.10' deep Parabolic Channel, n= 0.013 Asphalt, smooth  
Length= 65.0' Slope= 0.0100 '/  
Inlet Invert= 0.00', Outlet Invert= -0.65'



## Reach 2R: Study Point

Inflow Area = 0.371 ac, Inflow Depth > 1.70" for 10yr event  
Inflow = 1.04 cfs @ 12.10 hrs, Volume= 0.052 af  
Outflow = 1.04 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs

## Pond 1P: Infiltration Pond

Inflow Area = 0.282 ac, Inflow Depth > 2.20" for 10yr event  
Inflow = 0.79 cfs @ 12.09 hrs, Volume= 0.052 af  
Outflow = 0.77 cfs @ 12.11 hrs, Volume= 0.046 af, Atten= 3%, Lag= 1.0 min  
Discarded = 0.02 cfs @ 12.11 hrs, Volume= 0.013 af  
Primary = 0.75 cfs @ 12.11 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs / 4  
Peak Elev= 84.68' @ 12.11 hrs Surf.Area= 346 sf Storage= 334 cf

Plug-Flow detention time= 55.0 min calculated for 0.046 af (88% of inflow)  
Center-of-Mass det. time= 18.6 min ( 814.3 - 795.7 )

**14073-Post-Development Watershed**

Type III 24-hr 10yr Rainfall=4.70"

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Volume	Invert	Avail.Storage	Storage Description
#1	83.00'	453 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
83.00	60	0	0
84.00	220	140	140
85.00	405	313	453

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	<b>2,400 in/hr Exfiltration over Surface area</b>
#2	Primary	84.50'	<b>4.0' long x 4.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

**Discarded OutFlow** Max=0.02 cfs @ 12.11 hrs HW=84.68' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.74 cfs @ 12.11 hrs HW=84.68' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.74 cfs @ 1.02 fps)

**14073-Post-Development Watershed**

Type III 24-hr 25yr Rainfall=5.50"

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**Subcatchment 1S: Primarily Off-Ste**

Runoff = 0.57 cfs @ 12.08 hrs, Volume= 0.036 af, Depth&gt; 2.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 25yr Rainfall=5.50"

Area (sf)	CN	Description
6,704	77	1/8 acre lots, 65% imp, HSG A
2,346		Pervious Area
4,358		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: Mostly off-site**

Runoff = 0.47 cfs @ 12.08 hrs, Volume= 0.030 af, Depth&gt; 2.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 25yr Rainfall=5.50"

Area (sf)	CN	Description
5,590	77	1/8 acre lots, 65% imp, HSG A
1,957		Pervious Area
3,634		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 3S: New Building**

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 0.025 af, Depth&gt; 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Type III 24-hr 25yr Rainfall=5.50"

Area (sf)	CN	Description
2,900	98	Paved parking & roofs
945	39	>75% Grass cover, Good, HSG A
3,845	83	Weighted Average
945		Pervious Area
2,900		Impervious Area

# 14073-Post-Development Watershed

Type III 24-hr 25yr Rainfall=5.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

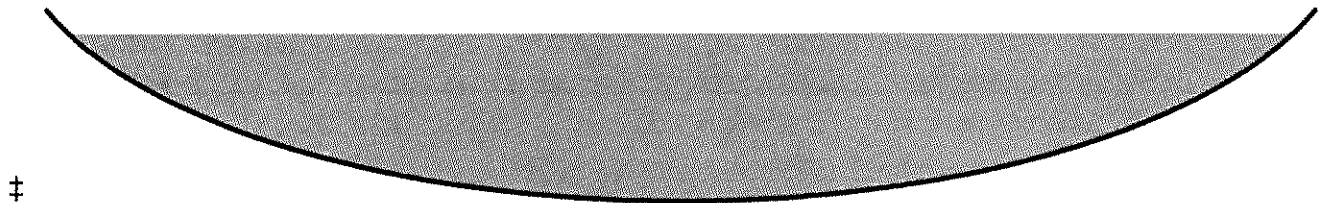
## Reach 1R: Pavement Swale

Inflow Area = 0.154 ac, Inflow Depth > 2.84" for 25yr event  
Inflow = 0.57 cfs @ 12.08 hrs, Volume= 0.036 af  
Outflow = 0.55 cfs @ 12.09 hrs, Volume= 0.036 af, Atten= 2%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs  
Max. Velocity= 1.72 fps, Min. Travel Time= 0.6 min  
Avg. Velocity = 0.62 fps, Avg. Travel Time= 1.7 min

Peak Storage= 21 cf @ 12.08 hrs, Average Depth at Peak Storage= 0.09'  
Bank-Full Depth= 0.10', Capacity at Bank-Full= 0.75 cfs

6.00' x 0.10' deep Parabolic Channel, n= 0.013 Asphalt, smooth  
Length= 65.0' Slope= 0.0100 '/'  
Inlet Invert= 0.00', Outlet Invert= -0.65'



## Reach 2R: Study Point

Inflow Area = 0.371 ac, Inflow Depth > 2.32" for 25yr event  
Inflow = 1.34 cfs @ 12.09 hrs, Volume= 0.072 af  
Outflow = 1.34 cfs @ 12.09 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs

## Pond 1P: Infiltration Pond

Inflow Area = 0.282 ac, Inflow Depth > 2.84" for 25yr event  
Inflow = 1.02 cfs @ 12.09 hrs, Volume= 0.067 af  
Outflow = 0.99 cfs @ 12.10 hrs, Volume= 0.061 af, Atten= 3%, Lag= 0.9 min  
Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.014 af  
Primary = 0.97 cfs @ 12.10 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.03 hrs / 4  
Peak Elev= 84.72' @ 12.10 hrs Surf.Area= 353 sf Storage= 345 cf

Plug-Flow detention time= 45.2 min calculated for 0.060 af (90% of inflow)  
Center-of-Mass det. time= 14.6 min ( 804.5 - 789.9 )

**14073-Post-Development Watershed**

Type III 24-hr 25yr Rainfall=5.50"

Prepared by {enter your company name here}

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Volume	Invert	Avail.Storage	Storage Description
#1	83.00'	453 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
83.00	60	0	0
84.00	220	140	140
85.00	405	313	453

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	<b>2.400 in/hr Exfiltration over Surface area</b>
#2	Primary	84.50'	<b>4.0' long x 4.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

**Discarded OutFlow** Max=0.02 cfs @ 12.10 hrs HW=84.72' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.96 cfs @ 12.10 hrs HW=84.72' (Free Discharge)

↳2=Broad-Crested Rectangular Weir (Weir Controls 0.96 cfs @ 1.11 fps)

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# **Attachment B**

## **Inspection and Maintenance**

## General Maintenance Criteria Infiltration Basin

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Preventive maintenance is vital for the long-term effectiveness of an infiltration system.

**1. Fertilization:** Fertilization of the area over the infiltration bed should be avoided unless absolutely necessary to establish vegetation.

**2. Snow Storage Prohibited:** Snow removed from any on-site or off-site areas may not be stored over an infiltration area

**3. Mowing:** A basin with a turf lining should have its side-slopes and floor mowed at least twice a year to prevent woody growth. Mowing operations may be difficult since the basin floor may remain wet for extended periods. If a low maintenance vegetation is used, basin mowing can be performed in the normally dry months. Clippings should be removed to minimize the amount of organic material accumulating in the basin.

**4. Monitoring and Inspections:** Inspect the infiltration system several times in the first year of operation and at least annually thereafter. Conduct the inspections after large storms to check for surface ponding at the inlet that may indicate clogging. Water levels in the observation well should be recorded over several days after the storm to ensure that the system drains within 72 hours after filling.

**4. Sediment Removal and Maintenance of System Performance:** Sediment must be removed from the system at least annually to prevent deterioration of system performance. The pre-treatment inlets should be checked periodically and cleaned out when accumulated sediment occupies more than 10% of available capacity. The system must be rehabilitated or replaced if its performance is degraded to the point that applicable stormwater standards are not met.



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# Attachment C

## Treatment Calculations



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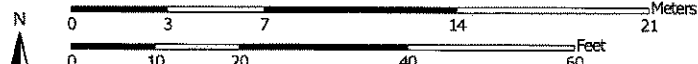
# Attachment D

## Soil Map

Soil Map—Cumberland County and Part of Oxford County, Maine  
(97 Cumberland Ave)



Map Scale: 1:259 if printed on A portrait (8.5" x 11") sheet.



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



## MAP LEGEND

- 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 1:24,000.

**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: <http://websoilsurvey.nrcs.usda.gov>  
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: Cumberland County and Part of Oxford County, Maine  
Survey Area Data: Version 8, Nov 27, 2013

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

Date(s) aerial images were photographed: Jul 31, 2013—Aug 11, 2013

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

Cumberland County and Part of Oxford County, Maine (ME005)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HIB	Hinckley gravelly sandy loam, 3 to 8 percent slopes	0.1	100.0%
Totals for Area of Interest		0.1	100.0%