

**General Information About Pervious Surfaces in Somerville**  
**from the Department of the Environment**  
**summarized by Martin Cline's intern project**

**Areas in Somerville (according to OES)**

**Impervious Surfaces**

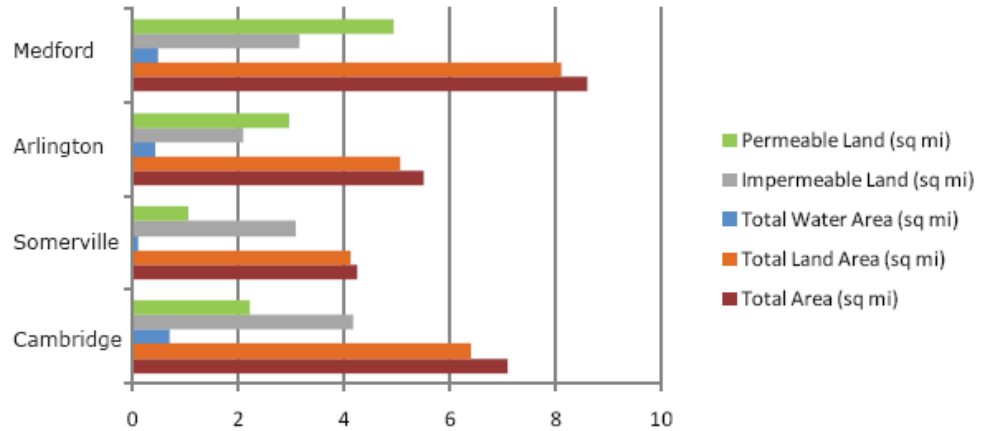
Buildings/ structures:	976.5 acres	35.9%
Paved:	611.2 acres	22.5%
Unpaved:	388.7 acres	14.3%
<b>Total Impervious:</b>	<b>1,976.4 acres</b>	<b>72.7%</b>
In square miles:	3.088 sq. miles	
In square feet:	86,091,984 sq. feet	

**Open Space**

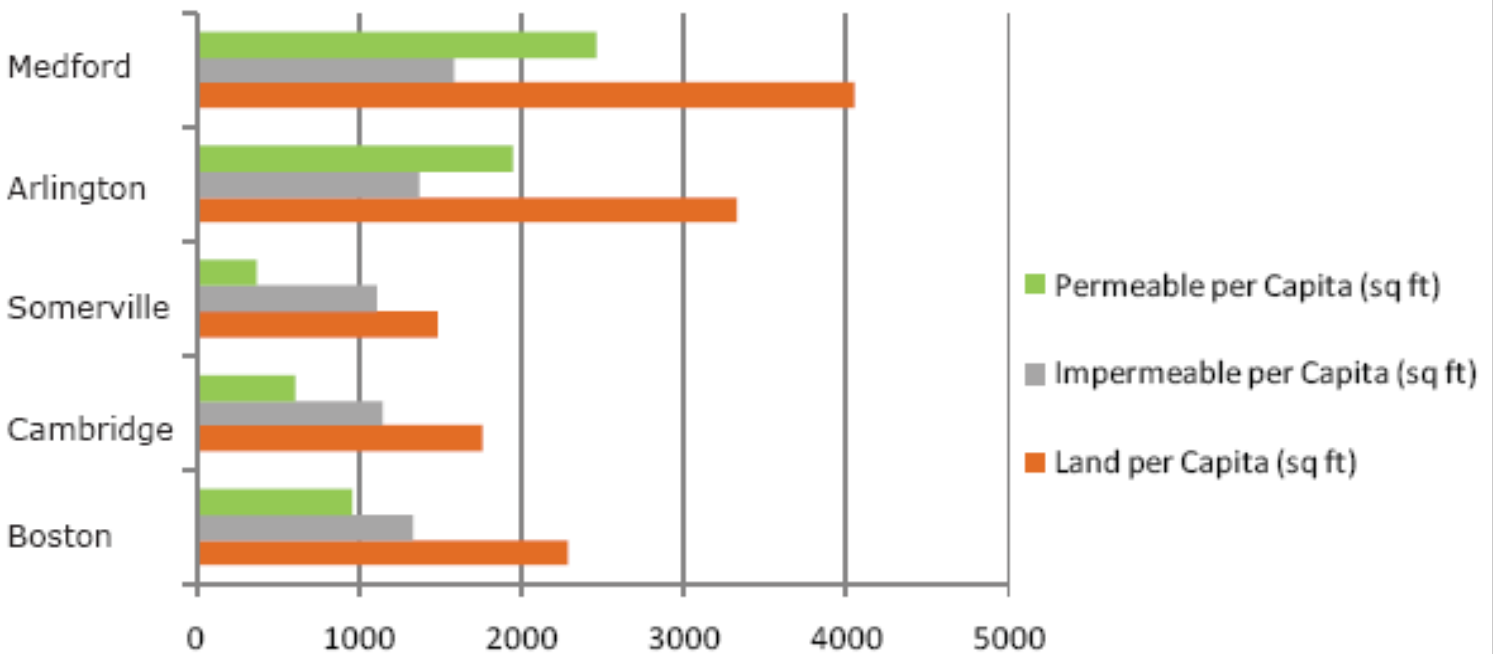
Grass, Scattered Trees:	179.9 acres	6.6%
Trees:	488.1 acres	18.0%
Urban:	0%	0%
Water:	74.9 acres	2.8%

<b>Total Area:</b>	<b>2,719.4 acres</b>	<b>100%</b>
<b>Total Land Area:</b>	<b>2644.5 acres</b>	
In square miles:	4.132 sq. miles	
In square feet:	115,194,420 sq. feet	

**Areas for regional cities**



**Surface areas per resident**



Data collected online as part of the permeable surfaces project in 2010.

## Summary of Intern Report by Martin Cline on Impervious Surfaces

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- Require a permit for the paving of more than 20 sf of ground to determine compliance with zoning and stormwater regulations, and to review impacts to abutters.
- Create a new definition in the zoning ordinance for “permeable surface”. Set minimum permeable surface requirements on all new projects based on zones and use. Other considerations might include proportion requirements for occupiable landscaping.
- Landowners would be responsible for preventing damaging or excessive runoff into neighboring lots.
- Require post development stormwater runoff to be no worse than runoff prior to development.
- Itemize the sewer bill to account for a stormwater utility fee, which is currently embedded.
  - The Department of Public Works would determine the *percentage of sewage flowing to MWRA (P)* which is the direct result of stormwater (currently estimated to be almost half). The determined percentage would then be removed from the *city’s total sewer fees (Se)* and be used to determine the *city’s total stormwater fees (Sf)*. The city would need to determine the number of square feet of impermeable surface for each landowner. The percentage of the total stormwater utility budget each landowner is responsible for would be determined by the dividing his *impermeable surfaces (I)* by the *overall total of impermeable surfaces in the city (IS)*.
$$Sf = Se (P)$$
$$\text{Landowners Stormwater Utility Fee} = [Sf (I/Is)]$$
This process would have the effect of reducing the landowners sewer bill and creating a fair stormwater fee based on his percentage of impermeable surfaces. As water is diverted from sewers and into the ground, charges from MWRA would be reduced, to help offset discounts. Public Utilities, Office of Environment & Sustainability, and OSPCD would meet to determine the fairest way to administer the utility.
  - Green roofs would also get a discount from the storm water fee. Roofs are regularly considered to be impermeable and account for part of a landowner’s responsibility when calculating stormwater fees. However, green roofs would be considered to be half their actual size when calculating stormwater responsibility. All green roofs would meet building codes.
  - When a property owner uses rain barrels or cisterns, the amount of water saved and used is related directly to the amount of runoff prevented. The cistern reduces rainwater runoff as well as municipal water used. It does not reduce Sewage. The water bill discount will be implicit. The Storm Water discount would be fairly small and based on the amount of rain water runoff reduced preferably by flow meter.
- Declare that a certain percentage (perhaps 70%) of each new surface parking lot must be permeable and that a certain percentage (maybe 10%) must be unpaved land with growing plants.
- Declare that owners of parking lots must also pay a storm water fee based on the amount of impermeable surface they have. If they pay for sewage, they would see sewer bill reductions in return.
- The City of Somerville should lead by example and look for opportunities to increase permeable surfaces on all city owned property. The city would continue increasing the number of street trees.

**Draft Policies and Actions  
from the  
Neighborhoods Committee of the Comprehensive Planning Process**

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**Environment**

**Goal:** Improve our shared neighborhood environmental quality.

**Policy:** The City should provide information and support to help residents make sound environmental choices.

*Action:* Provide resources – written and on-line – to help residents understand the impacts of environmental choices.

*Action:* Consolidate access to resources, including energy grants, in one place where residents can understand eligibility.

*Action:* Develop guides to landscaping that would be appropriate for Somerville's climate and development character.

*Action:* Provide more access for residents to buy rain barrels and composting bins.

**Policy:** The City should ensure that residents are aware of the environmental impacts of activities on individual lots.

*Action:* Increase public awareness of impacts of waste management and recycling.

*Action:* Provide information to residents on impacts of paving surfaces and reduction of tree cover.

**Policy:** The City should protect neighbors from the environmental impacts of decisions made by individual property owners.

*Action:* Pursue a program to reduce pervious pavement, including but not limited to developing a maximum impervious lot coverage requirement and incentives for more plantings.

*Action:* Develop a permitting process for paving of private lots to ensure that development is consistent with zoning and stormwater policies.

*Action:* Review and implement setback regulations for impervious driveways, requiring a pervious buffer to eliminate runoff into neighboring lots.

*Action:* Investigate shifting of a portion of the sewer fee towards a stormwater fee that reflects off-site runoff from lots.



## Pervious Driveways

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## **Overview of the City of Lowell Paving Contractor Registration and Permit System**

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- **Lowell City Council took two steps in 2008 to address this issue:**
  - Authorizing a City Department (in Lowell's case it was Engineering) to develop driveway permitting regulations and fees
  - Amending zoning to accept state stormwater standard citywide and limit paved areas on lots
  
- **Permitting Process:**
  - Driveway permit process integrated with curbcut permit process, but all driveway paving, even without a new curbcut, still requires a permit
  - Fees: Residential = \$100, Commercial = \$250; plus \$50 inspection fee
  - Contractor required to post bond with city and register
  - Contractor responsible for securing permit
  - Applicant must submit sketch including scale, dimensions, lines of adjoining property and existing and proposed driveway. Survey plot plan is not required. Photos of existing site are also encouraged.
  - Driveways replaced in the same location require permitting. No permit required for crack-sealing operations
  
- **Zoning Regulation:**
  - Adoption of state stormwater standard citywide: no additional runoff to neighboring properties or to the street. Reduction in runoff required to the extent practicable. Required for all lots, not just those typically subject to review.
  - Landscape requirement is set on a per-unit basis for residential projects and landscaping is required to be in blocks of at least 225 square feet.
  - Front yards must be at least 50% landscaping

## **Recommended Strategy for Somerville**

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### **Current System:**

- Paving of lots requires no city permits (except curbcuts where applicable)
- Landscaping required to be 10% to 25% of lots, but landscaping can be impervious as long as a vehicle is not parked in a landscape area
- Parking areas may be pervious or impervious, but no benefit in zoning is established for impervious surfaces
- No clear regulation establishes that runoff from one lot may not impact other lots or city streets (although drainage reports are required for many projects and permit conditions usually address this concern)

### **1. Paving Contractor Registration and Permitting System**

- Require registration of all paving contractors doing business in the City of Somerville
- Require permits for all paving work in the City of Somerville
- Identify responsible party (ISD? DPW?) for administration of the process
- Authorize department to establish regulations

### **2. Zoning Amendments**

- Establish more clear regulations for number and size of curbcuts
- Establish new standard for on-site pervious surface that can include pervious driveways as well as pervious landscape areas
- Review landscape requirements
- Review existing regulations for runoff into neighboring properties and/or streets and make adjustments as necessary, including adoption of state standards

### **3. City Policies**

- Establish, with DPW / Engineering / ISD a single policy for implementing the strategies above
- Merge with City curbcut policy if appropriate