VERMONT

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Memo

To: Dan Dickerson, Joint Fiscal Office

From: John E. Adams, VCGI Director

Date: 1/17/2019

Re: Data needs for an impervious surface stormwater fee

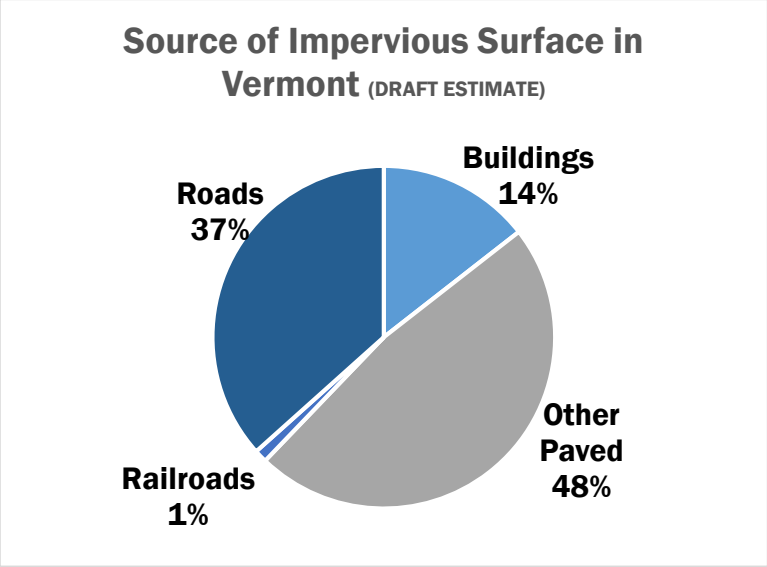
This memorandum updates information provided to the Clean Water Fund Working Group on 8/25/2017 and outlines the status of statewide impervious surface data and statewide parcel data. I've included some notes related to ongoing maintenance needs as well as several other issues to consider.

Statewide Impervious Surface Data.

Status: Draft of statewide dataset is complete and under review. The dataset was developed by the UVM Spatial Analysis Lab and was derived from 4 band orthophotography and lidar data used to generate high resolution land cover data.

Initial estimates of the impervious surface in Vermont:

Buildings:	20,562.69 Acres
Other Paved:	67,878.58 Acres
Railroads:	1,708.93 Acres
Roads:	52,086.25 Acres
TOTAL:	142,236.45



Ongoing maintenance needs: The frequency and extent of necessary updates to the data needed to successfully administer an impervious surface fee is currently unknown. Updates to the data will be needed to capture changes in impervious surface cover due to development and redevelopment of areas, as well as to correct any identified inaccuracies in the data. Costs associated with updating the dataset are dependent on a several variables

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related to program specifics and advancements in technology. The source for updates from the data could either come from imagery, or from documentation submitted as part of a permitting process. Given that most development in Vermont is not subject to any State permit/review, updates would likely need to come from orthophotography (as opposed to any application requirements submissions.) Unmanned aircraft systems may also be used on a targeted basis, however, are currently uneconomical to use over large areas. It may be possible to capture areas undergoing higher levels of change by incorporating application submission materials for projects that are subject to State review – such as Act 250 or stormwater permits. Additionally, municipalities could also potentially update data based on information collected via local review processes. Updates using orthophotography depend on access to updated imagery and technical capabilities to update the data given the resolution and conditions at the time of collection (leaf-on vs. leaf off.) Both access to updated imagery and our abilities to process imagery to identify change is changing rapidly.

Considerations:

- The definition of what qualifies as impervious surface could have significant impact on data needs. If the definition differs from mapped land cover classifications, it may be challenging if not impossible in any economical way to update the data.
- A process for updating and/or appealing any measurements must be clearly defined.

Statewide Parcel Data. (Target Completion: January 1, 2020)
The creation of a statewide GIS database of parcel boundaries that is joined to the grand list is a significant multiagency initiative underway that will produce a dataset that could potentially be utilized to administer an impervious surface stormwater fee. Acquisition of the data is broken up into 3 phases, with approximately 1/3 of municipalities to be completed in each phase. The project is managed by VTrans in collaboration with VCGI.

Status: 107 municipalities complete. Phase 2 underway and phase 3 to begin in March 2019.

Ongoing maintenance needs: VCGI is currently working with the State Parcel Advisory board to develop a maintenance program that would keep parcel data up to date. It is assumed that parcel data would need to be maintained regularly to capture changes and to be able to measure impervious surface and assign a corresponding fee to a parcel. Many municipalities currently do not update their parcel data on a regular basis and VCGI is evaluating options for how to most cost effectively keep the data maintained without adding to the workload of municipalities. There are a variety of significant challenges with keeping parcel data up to date in Vermont. While most subdivisions and boundary line adjustments are surveyed, surveys are typically only available in a paper format in the municipal land records.

Considerations:

- Parcel data will vary in quality and the boundaries represented are approximate.
- Initial calculations show that approximately 5%-9% of land area in Vermont is unaccounted for when comparing the listed acreage in the grand list with the physical area of Vermont.

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Municipalities would potentially need to update parcel maps to identify mapped areas that do not join with the grand list.

- Differences in how municipalities maintain their grand lists may create challenges in consistently assigning an impervious surface value to certain kinds of properties, such as 'unlanded parcels' and common lands.
- The definition of a parcel, "all contiguous land in the same ownership, together with all improvements thereon," is problematic when certain span numbers become 'inactive' and not reflected on the grand list.