

The Vermont Department of Taxes submitted the following memo to Vermont State Treasurer Beth Pearce on November 10, 2016 in accordance with Act 64 of 2015. The aim of this memo was to help inform the Treasurer and others required to work on funding options for statewide quality improvements (Sec. 40 of Act 64). This analysis was conducted in response to requests for more information about the four revenue options contained herein.

The contents of this memo should be used for information purposes only and should not be construed as a proposal from the current Administration.

Furthermore, the revenue concepts contained herein are not fully developed and are aimed at providing a general overview of the potential of these sources.

Draft Memo: Impervious Surface and Parcel Fee Considerations

The Department of Taxes (TAX) modeled four approaches to property-based parcel and impervious surface fees. This memo will provide an overview of the structure and methodology used to estimate each source. Those sources are outlined in the table below.

	Revenue Source	Tiered?	Parcel/Impervious	Estimate	Equity	Admin
1	\$50 Flat Fee Per Parcel	No	Parcel	\$16.7M	Poor	Easiest
2	\$3 Per Acre Per Parcel	No (scaled)	Parcel	\$15.0M	Fairer	Easy
3	Impervious Parcel Fee	Yes	Parcel & Impervious	\$18.0M	Fair	Fair
4	Impervious Acre Parcel Fee	Yes	Mostly Impervious	\$18.0M	Fairest	Harder

The above fees would be collected at the municipal level, where property taxes are collected. TAX does not collect property taxes and is therefore not positioned to collect property fees.

Approach 1: \$50 Flat Fee Per Parcel

Approach 1 is the simplest and easiest of all four structures to administer. It is a \$50 annual fee paid on a per-parcel basis by landowners. It is the least fair because a landowner with a 1,000-plus acre plot will pay the same annual amount as a landowner with an 0.25-acre plot. This fee also does not account for impervious surface or land use.

Approach 1 would generate an estimated \$16.7M annually → 330,000 parcels * \$50 = \$16.7M. Federal and state government properties have been removed from this sample of parcels, and all other properties are included, even those that are exempt from statewide education property taxes.

Approach 2: \$3 Per Acre Per Parcel Fee

Approach 2 assesses an annual fee of \$3 per acre. It would be paid by the owner of a parcel based on the number of acres within that parcel. This approach is fairer than Approach 1 in that it scales based on parcel size, but it does not account for the use or impervious surface of a parcel.

This approach would generate an estimated \$15M annually → 5M acres * \$3 = \$15M. Approach 2, just as Approach 1, excludes government properties and incorporates all other property.

Impervious Surface Modeling

The Department of Environment Conservation (DEC) provided TAX with impervious surface data that TAX matched to 46,000 parcels (14% of statewide total) in 46 Vermont cities and towns. To organize the impervious surface data, TAX: 1) grouped the 46,000 parcels by Grand List category, 2) identified the median percent of impervious surface per category, 3) grouped the categories by median percent of impervious surface, and 4) assigned a baseline scaling factor representative of median impervious percentages, which is applied to a baseline value for the impervious surface fees.

Table 1 on the next page summarizes this method for grouping parcels by impervious surface. Figure 1 – below Table 1 on the next page – shows the distribution of impervious surface by grand list category.

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Table 1: Overview of Impervious Surface by Grand List Category, Grouped by Impervious Group

Grand List Category #	Category Description	Sample Size (Parcels)	Median % Impervious	Impervious Group	Baseline Scaling Factor
2	R2 > 6 acres	6,157	1.6%	1	1
6	S2 > 6 acres	186	0.6%	1	1
12	Farm	201	0.8%	1	1
14	Woodland	159	0.3%	1	1
15	Miscellaneous	1,693	1.4%	1	1
1	R1 < 6 acres	31,995	16.0%	2	10
3	Mobile Home Unlanded	5	10.7%	2	10
4	Mobile Home Landed	1,036	6.2%	2	10
5	S1 < 6 acres	584	7.5%	2	10
10	Utilities: Electric	15	24.1%	3	25
11	Utilities: Other	10	23.7%	3	25
13	Other	678	29.0%	3	25
7	Commercial	2,571	51.7%	4	50
8	Commercial Apartments	577	50.1%	4	50
9	Industrial	190	55.8%	4	50
Total		46,057	12.8%		

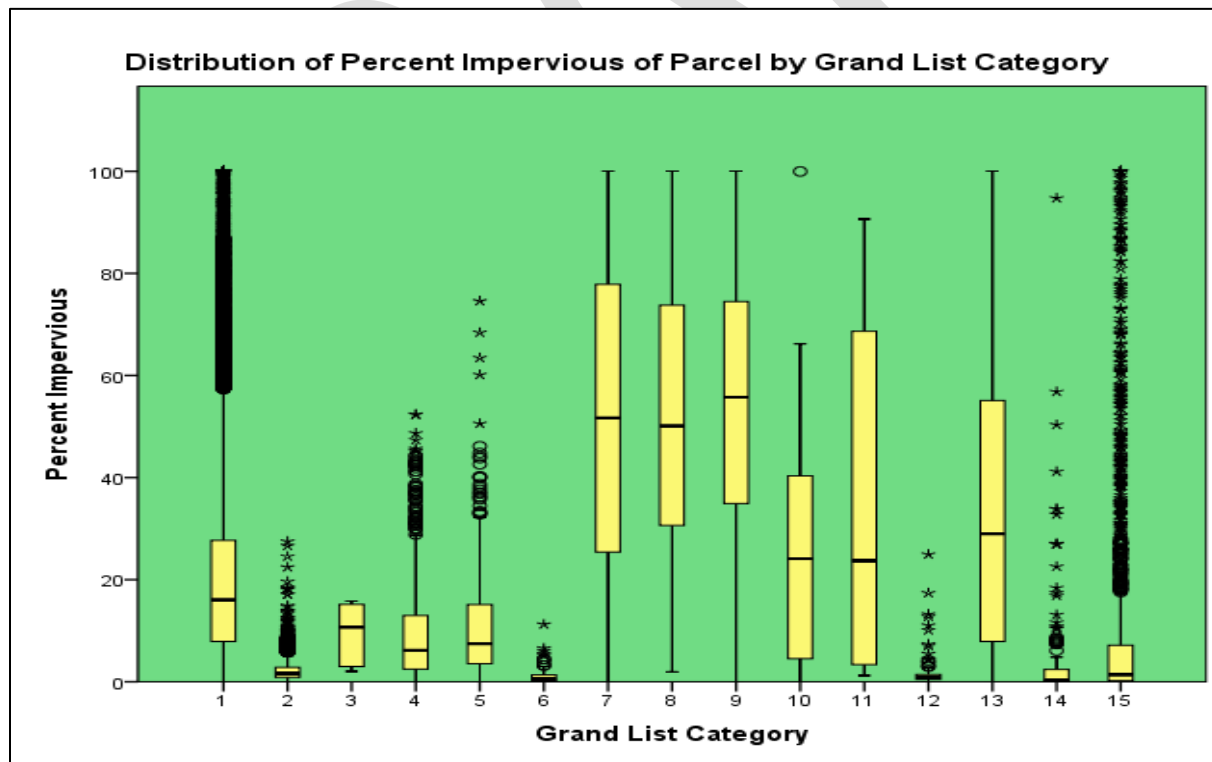


Figure 1 shows the distribution of impervious surface by grand list use code. Within each code, parcels are organized by % of impervious surface, and the middle 50% (between 25%-75%), known as the interquartile range, is represented by the yellow boxes. The black line in the middle of those boxes is the median of the sample, and the stars and circles are outliers.

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TAX matched impervious surface data to grand list data for the following cities and towns: Bakersfield, Barre City, Barre Town, Bridport, Bristol, Burlington, Charlotte, Colchester, East Montpelier, Fair Haven, Fayston, Ferrisburgh, Fletcher, Georgia, Highgate, Hinesburg, Hyde Park, Isle Lamotte, Jericho, Leicester, Mendon, Middlebury, Middletown Springs, Milton, Monkton, Montpelier, Northfield, Orange, Orwell, Proctor, Richmond, Salisbury, Shoreham, South Burlington, St. Albans, St. George, Stowe, Underhill, Vergennes, Warren, Washington, Waterbury, Westford, Whiting, Williston, and Winooski.

Approach 3: Impervious Parcel Fee

This impervious parcel fee groups all 330,000 Vermont parcels by their grand list use code. These parcels are then organized into impervious surface groups based on the methodology in Table 1. If a \$5 baseline fee were applied to impervious group 1, then group 2 would be assessed a \$50 fee → \$5 baseline fee * 10 (which is the baseline scaling factor for group 2).

A \$5 baseline fee using this methodology would generate about \$18M (see example at the end of memo). This model doesn't account for acreage. So, a 1,000-acre property and a 1-acre property of the same impervious group would be assessed the same fee under this model.

Approach 4: Impervious Acre Parcel Fee

Approach 4 uses the same fundamental impervious parcel methodology as Approach 3, except that it applies the impervious surface fee to the number of acres instead of parcels. Under this model a 10-acre parcel of the same impervious group as a 1-acre parcel would pay 10 times more than the 1-acre parcel.

A \$1 baseline fee using Approach 4 would generate roughly \$18M (see example at end of memo). While this method is the fairest of those proposed for impervious surfaces, it still has its shortcomings.

Impervious Surface Mapping

The above two approaches to impervious fees are derived from data samples using statistical analyses. To pinpoint the amount of impervious surface per parcel in Vermont, the State needs two tools: 1) a statewide parcel map, and 2) an impervious surface map of Vermont.

The State is currently creating a statewide parcel map, and that process is expected to conclude in late 2019, per the Vermont Center for Geographic Information (VCGI). Also, according to VCGI, the State could work with UVM's Spatial Analysis lab to map impervious surface in conjunction with another project for roughly \$90K. This work would need to begin in spring of 2017 and could conclude at the end of the year. Another private firm quoted VCGI about \$900K for this work.

Any fee based on statewide impervious surface data, therefore, could not be estimated and crafted for roughly three years. This includes proposals that would apply tiers to all Vermont parcels based on acres of impervious surface. A statistical approach is the only method available at present.

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Other Considerations

- Decide whether to include exemptions and what they are.
- Some towns, such as Burlington, have utilities based on similar structures. Need to determine how to treat these entities.
- Should towns be credited for mitigating storm water and other sources of runoff?
- Might consider adjusted fees for multi-family properties.
- These models don't account for other contributors of runoff outside of impervious on parcels (i.e. impervious roads, agriculture runoff, etc.).
- Grand list use codes would need to be verified, as they aren't currently used to assess.

Example of Approach #3:

Approach #3: Impervious Parcel Fee			Baseline Assumed Fee Per Parcel ->	\$5	<-Change Me!
Cat #	Cat Desc.	Real Property Category Description (PVR)	Estimated Number of Parcels	Assumed Fee Per Parcel	Estimated Revenue
2	R2	Residential property with <i>more</i> than six acres of land; up to four dwelling units	52,680		
6	S2	Seasonal property with <i>more</i> than six acres of land	6,383		
12	F	Farm - parcels with buildings that are part of an operating farm	2,716		
14	W	Woodland - undeveloped land that is <i>mostly</i> wooded, but can include tracts with some improvements, such as deer camps	7,853		
15	M	Miscellaneous - undeveloped land that is <i>not</i> mostly wooded	32,497		
Set Assumed Fee Per Parcel in cell G1			102,129	\$5	\$511,000
1	R1	Residential property with <i>less</i> than six acres of land; up to four dwelling units	152,917		
3	MH "	Mobile home unlanded (on land not owned by the owner of the mobile home)	10,345		
4	MH "	Mobile home landed (on land owned by owner of mobile home)	10,424		
5	S1	Seasonal property with <i>less</i> than six acres of land	11,984		
Assumed Fee Per Parcel is set a ten times as much as first group			185,670	\$50	\$9,284,000
10	UE	Electric utilities - operating property	857		
11	OE	Other utilities - operating property	238		
13	O	Other - intended for <i>subcategories</i> of other types of property - condominiums, trailer coaches, lake-front property, etc.	23,040		
Assumed Fee Per Parcel is set at 25 times as much as first group			24,135	\$125	\$3,016,875
7	C	Commercial - properties used in providing goods and services	17,822		
8	CA	Commercial apartments (with more than four dwelling units)	2,126		
9	I	Industrial -properties used in manufacturing	910		
Assumed Fee Per Parcel is set at 50 times as much as first group			20,858	\$250	\$5,215,000
Totals			332,792		\$18,026,875

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Example of Approach 4:

Approach 4: Impervious Acre Parcel Fee			Baseline Assumed Fee Per Parcel Per Acre->	\$1	<- Change Me!
Cat #	Cat Desc.	Real Property Category Description (PVR)	Estimated Number of Acres	Assumed Fee Per Parcel Per Acre	Estimated Revenue
2	R2	Residential property with <i>more</i> than six acres of land; up to four dwelling units	1,858,000		
6	S2	Seasonal property with <i>more</i> than six acres of land	340,000		
12	F	Farm - parcels with buildings that are part of an operating farm	540,000		
14	W	Woodland - undeveloped land that is <i>mostly</i> wooded, but can include tracts with some improvements, such as deer camps	908,000		
15	M	Miscellaneous - undeveloped land that is <i>not</i> mostly wooded	784,000		
Set Assumed Fee Per Parcel Per Acre in cell G1			4,430,000	\$1	\$4,430,000
1	R1	Residential property with <i>less</i> than six acres of land; up to four dwelling units	205,000		
3	MH	Mobile home unlanded (on land not owned by the owner of the mobile home)	500		
4	MHL	Mobile home landed (on land owned by owner of mobile home)	79,000		
5	S1	Seasonal property with <i>less</i> than six acres of land	16,000		
Assumed Fee Per Parcel Per Acre is set at ten times as much as first group			300,500	\$10	\$3,005,000
10	UE	Electric utilities - operating property	26,000		
11	OE	Other utilities - operating property	3,000		
13	O	Other - intended for <i>subcategories</i> of other types of property - condominiums, trailer coaches, lake-front	25,000		
Assumed Fee Per Parcel Per Acre is set at 25 times as much as first group			54,000	\$25	\$1,350,000
7	C	Commercial - properties used in providing goods and services	158,000		
8	CA	Commercial apartments (with more than four dwelling units)	4,000		
9	I	Industrial -properties used in manufacturing	23,000		
Assumed Fee Per Parcel Per Acre is set at 50 times as much as first group			185,000	\$50	\$9,250,000
Totals			4,969,500		\$18,035,000