

Findings and Identification of Conflicts in Data Review -- July 20, 2021



EXECUTIVE SUMMARY

Walsh-Copeland Consulting was requested by Supervisor Buffington to review the Staff responses to TLUC questions for “*key points or takeaways deciphered from the data.*”

KEY CONCLUSIONS:

- Past performance of cluster development and prime soils data is not a valid or reliable indicator of future impact to prime soils and RPA preservation due to manual reporting and data discrepancies.
- Conservation easements protect large areas of the RPA, but as a voluntary measure they cannot predict prime soils protections going forward. Direct comparison of easements to cluster units built may not be applicable primarily due to impacts of the pre-2010 housing crash and 2020 pandemic.
- Staff’s RPA Build-out assumption that “*all 20+ and 40+ parcels are assumed to develop as cluster developments*” was not previously known to be the default. This assumption supports the need for ZOAM-2020-0002 to all future cluster development to protect prime soils and farmland to RPA build-out.
- Staff’s RPA Build-out assumption that all <20 and <40 acre parcels will “*develop as non-cluster*” likely understates the actual build-out results due to parcels under single ownership that can be recombined and apply the cluster ordinance for development.
 - Development of parcels <20 and <40 acres, as well as existing parcels under common ownership that may not use the cluster ordinance supports ZOAM-2020-0002 being expanded to protect prime soils for any development type.
- Any inference based on current clusters that loss of prime soils will not impact RPA farmland and tourism long-term would be incorrect. To fully recognize the overall impact on the sustainability of prime soils – and address the TLUC point that “*we must have the data somewhere to prove that is, in fact, happening,*”— RPA clusters and build-out are better understood via GIS mapping to see where clusters are and will be located. GIS maps showing location current and potential future cluster development better visualizes build-out impacts, versus just tabulation of prime soil acres.

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KEY FINDINGS:

- Q1 & Q2: RPA residential units and Cluster units/lots: The quantity of residential units (including clustered units) for the time period was validated within a reasonable range. However, due to the manual requirement for reporting, discrepancies were found between Staff's totals for the time period compared with other source data from cluster subdivision industry experts.
- Q3 & Q4: RPA residential and Cluster Units built requiring Board approval: Agree with Staff that these questions are not applicable.
- Q5: Cluster subdivision and prime soil acreage: Due to discrepancies between Staff and "experts" data sources, the quantity of cluster acreage reported by Staff was less than the total found, indicating the prime soils acreage reported is likely understated.
Any inference based on current clusters that prime soils will not impact RPA farmland and tourism long-term would be incorrect. To fully recognize the overall impact on the sustainability of prime soils – and address the TLUC point that "we must have the data somewhere to prove that is, in fact, happening,"— RPA clusters and build-out are better understood via GIS mapping to see where clusters are located. GIS maps showing location current and potential future cluster development better visualizes build-out impacts, versus just tabulation of prime soil acres.
- Q6: Conservation easements: The time horizon used for reporting the quantity of conservation easements, acres, parcels was 17 months longer than the time horizon used for cluster subdivision reporting. Timeframes were adjusted,
However direct comparison of easements to cluster units built may not be applicable primarily due to impacts of the pre-2010 housing crash and 2020 pandemic. Past performance of cluster development is not an indicator of future impact to prime soils and RPA preservation.
- Q7: Potential By-right Residential Units in RPA at Build-out: Staff's RPA Build out units calculated in 2017 (presented to BOS in 2018 for the 2019 Comp Plan) is within a reasonable range using a different methodology of calculation in 2021. However:
 - Staff's assumption that "*all 20+ and 40+ parcels are assumed to develop as cluster developments*" was not previously known to be the default. **This assumption supports the need for ZOAM-2020-0002 to all future cluster development to protect prime soils and RPA farmland.**
 - Staff's assumption that all <20 and <40 acre parcels will "*develop as non-cluster*" likely understates the actual build-out results due to parcels under single ownership that can be recombined and apply the cluster ordinance for development. **Development of parcels <20 and <40 acres, as well as existing parcels under common ownership that may not use the cluster ordinance supports ZOAM-2020-0002 being expanded to protect prime soils for any development type.**
 - In Staff's defense, the time and level of effort to identify and quantify the future impacts is intense. A *sample* of impact using 18 potential clusters recombined from single ownership (not all-inclusive) is provided as Attachment B.
- Q8: Cluster ordinance changes to protect 80% prime soils: In staff's defense, although the current "Developable Percent" field can provide an approximation, the current systems do not provide a dynamic data field that can be modified to test various variables and results. This capability has been requested via ZOC and ZOAM input to be included in enCodePlus.

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	TLUC/Board Questions	County Staff Responses	WCC REVIEW
1	<p>How many homes have been built (or permitted)</p> <ul style="list-style-type: none"> - in the RPA, - in the past 10 years (July 1, 2010 to July 1, 2020), - by right? 	<p>Built –2,080 residential units (includes clustered units) (Source: Loudoun County GIS, Land Use Structures Layer)</p> <p>Permitted – 105 residential units (includes clustered units) (Source: Loudoun County GIS, Land Use Structures Layer)</p>	<p>VALIDATED. County data from 1/2010 to 12/2020 supports Staff findings within a reasonable range:</p> <ul style="list-style-type: none"> • Built – 2,173 residential units (includes clustered units, AR1, AR2, A10, A3, JLMA1, JLMA2, JLMA3 and JLMA20) (Source: Loudoun County GIS, Res Structures file) • “Permitted” Definition: Quantity of houses that have filed for permits = 77 residential units for subdivisions <100% complete (includes clustered units) (Source: Loudoun County GIS, Land Use Structures Layer)
2	<p>How many homes have been built (and residential lots created)</p> <ul style="list-style-type: none"> - in the RPA, - in the past 10 years (July 1, 2010 to July 1, 2020), - by right, - using the clustering option to increase density from 1/20 to 1/5 in the cluster? 	<p>Built – 67 clustered residential units (Source: Loudoun County GIS, Structures Layer)</p> <p>Permitted – 10 clustered residential units (Source: Loudoun County GIS, Land Use Structures Layer)</p> <p>Lots Created – 187 clustered lots (153 residential lots, 30 rural economy lots, 4 open space lots) (Source: DPZ cluster analysis)</p>	<p>FINDINGS:</p> <ul style="list-style-type: none"> • Because there is no “flag” in LMIS to identify cluster developments, reporting for cluster subdivisions is <i>manual</i>. • WCC’s review of Staff’s Cluster summary showed discrepancies: <ul style="list-style-type: none"> ○ Staff’s 6/16/21 Cluster summary for the time period had four (4) missing Cluster subdivisions that were listed in a March 2021 report prepared by the “<i>Unintended Consequences</i>” group (experts directly involved in cluster developments*). ○ In addition, the expert’s* 3/8/21 report did not include three (3) cluster subdivisions that were listed on the Staff cluster subdivision reports and maps created 5/7/2020. • Including all clusters identified by Staff and the experts*, the total quantity of lots created was 330 vs. the 187 identified by Staff for the same time period. (See Attachment A) • Due to these report discrepancies, and the extremely manual reporting for cluster subdivisions, it cannot be confirmed that all cluster subdivisions have been identified. <p>Therefore, <u>ALL</u> cluster report summaries should be considered “<i>estimates</i>.”</p>

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			<p>The following provides a summary of cluster subdivision quantification that includes all input sources:</p> <table><tr><th>Cluster Subdivisions</th><th>Total Lots</th><th>Cluster Lots</th><th>RE Lot/ Open</th><th>Houses Built</th><th>Acres</th></tr><tr><td>2005-2009</td><td>27</td><td>22</td><td>5</td><td>22</td><td>263</td></tr><tr><td>7/2010-7/2020</td><td>330</td><td>274</td><td>57</td><td>143</td><td>1764</td></tr><tr><td>8/2020 +</td><td>52</td><td>36</td><td>16</td><td>3</td><td>235</td></tr><tr><td>TOTAL</td><td>409</td><td>332</td><td>78</td><td>168</td><td>2262</td></tr></table> <p>Sources: Loudoun GeoHub Residential Communities app/file, Loudoun Online Land Application (LOLA), DPZ reports prepared 5/7/2020, and *report prepared by Myers, Hummel & Zicht.</p>	Cluster Subdivisions	Total Lots	Cluster Lots	RE Lot/ Open	Houses Built	Acres	2005-2009	27	22	5	22	263	7/2010-7/2020	330	274	57	143	1764	8/2020 +	52	36	16	3	235	TOTAL	409	332	78	168	2262
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3	How many homes have been built (and residential lots created) <ul style="list-style-type: none">- in the RPA,- in the past 10 years (July 1, 2010 to July 1, 2020),- requiring Board approval?	Since no subdivisions requiring Board approval were submitted between July 1, 2010 and July 1, 2020, no residential units requiring Board approval within that timeframe were built or permitted.	Agree with Staff. The question is not applicable; by-right development in the RPA does not require Board approval.																														
4	How many homes have been built (and residential lots created) <ul style="list-style-type: none">- in the RPA,- in the past 10 years (July 1, 2010 to July 1, 2020),- requiring Board approval,- using the clustering option?	Since no cluster subdivisions requiring Board approval were submitted between July 1, 2010 and July 1, 2020, no residential units requiring Board approval within that timeframe were built or permitted.	Agree with Staff. The question is not applicable; by-right development in the RPA does not require Board approval.																														

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5	<p>How many acres (Residential Lots v. OS/Rural Economy) have seen cluster development in the past ten years (July 1, 2010 to July 1, 2020)?</p> <ul style="list-style-type: none"> The total should include “approved” and “active” developments. This should include any development in AR- 1 or AR-2 at greater than 1/20 density. 	<p>Cluster Subdivision Acreage Approved: Approximately 963 acres</p> <ul style="list-style-type: none"> Prime Soils Acreage: Approximately 364 acres 7/7/21: <ul style="list-style-type: none"> Open Space/Rural Economy: 223 acres Residential lots: 132 acres Other (e.g. roads): 9 acres Non-Prime Soils Acreage: Approximately 599 acres <p>Cluster Subdivision Acreage Active: Approximately 497 acres</p> <ul style="list-style-type: none"> Prime Soils Acreage: Approximately 130.5 acres 7/7/21: <ul style="list-style-type: none"> Open Space/Rural Economy: 56.5 acres Residential lots: 72 acres Other (e.g. roads): 2 acres Non-Prime Soils Acreage: Approximately 366.5 acres 	<p>FINDINGS:</p> <ul style="list-style-type: none"> Cluster Subdivision Acreage: Although possibly not all-inclusive, the total Cluster acres from 2005 to 2021 from current data sources is approximately 2262 acres. Cluster Acreage for July 2010 to July 2020 <u>TOTAL</u> from all data sources: 1764 <ul style="list-style-type: none"> Staff Cluster-Approved: 963 Staff Cluster – Active: <u>497</u> Staff Total 1,460 Differences are due to discrepancies between Staff report and “experts*” report highlighted in Question 2. <p>PRIME SOILS ACREAGE:</p> <ul style="list-style-type: none"> Confirmed that County Mapping Staff’s methodology to obtain the prime soils acreage uses ArcGIS “clip analysis.” (GIS Analyst selection of area/parcels, selection of soils data layer, run query for results). <p>Although the acre totals for Staff’s selected clusters may be accurate, there are two points of clarification required:</p> <ul style="list-style-type: none"> Due to discrepancies between Staff’s cluster reports and those of industry experts, (Question 2), the prime ag soils totals included in the Staff 7/7/21 response likely <u>understate</u> the prime soils for <u>ALL</u> cluster subdivisions for the time period of the reports. Per Loudoun Soils and Water and Farm Bureau, there are 15 prime ag soil types in Loudoun County: 3A (in floodplain), 13B, 17B, 23B (most common prime ag soil in Loudoun), 28B, 31B, 43B, 45B, 55B, 70B, 71B, 76B, 90B, 93B, and 94B. <p>Staff’s response did not include WHICH soils within the data layer were included in the “Prime soils” query and calculations. ZOAM-2020-0002 maps include secondary cropland; it is unknown whether these soils were counted in the acreage values.</p>

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	<ul style="list-style-type: none"> If possible, I would like this answer to include a chart listing parcels developed through clustering that shows the size, in acres, of each parcel, the total prime soils on that parcel, and the total amount of prime soils used by the cluster. I suspect this data does not exist, but if the contention is that clusters are using up prime soils, we must have the data somewhere to prove that is, in fact, happening. 	<p>Notes:</p> <ol style="list-style-type: none"> The attached Excel spreadsheet titled “Cluster Development (Board Q5)” provides a detailed breakdown of specific acreage by subdivision and by parcel for both Approved and Active cluster subdivisions, including how much of each cluster subdivision and parcel is comprised of Prime Agricultural Soils. Staff is still analyzing the data to determine how much of the Prime Agricultural Soil acreage is in rural economy lots/open space lots vs. residential lots and will provide that information as soon as it is available. <i>7/7/21: The attached Excel spreadsheet titled “Cluster Development ZOAM (Board Q7)” provides a detailed breakdown of Prime Agricultural Soils acreage by subdivision for both Approved and Active cluster subdivisions.</i> All acreage numbers above are rounded. 	<ul style="list-style-type: none"> Any inference based on current clusters that prime soils will not impact RPA farmland and tourism long-term would be incorrect. To fully recognize the overall impact on the sustainability of prime soils – and address the TLUC point that “<i>we must have the data somewhere to prove that is, in fact, happening,</i>” – <u>RPA clusters and build-out</u> are better understood via GIS mapping to see <u>where</u> clusters are located. GIS maps showing location current and potential future cluster development better visualizes build-out, versus just tabulation of prime soil acres. In defense of Staff, the TLUC/BOS question asking for quantification of acres of prime ag soils within current cluster subdivisions alone does not fully reflect the overall impact of development (cluster or other) on prime ag soils in the RPA. <u>AR Development Options:</u> DPZ Staff “reminded” the Zoning Ordinance Committee at the July 7th meeting that AR-1 and AR-2 are not “Residential” districts, they are “Agricultural Rural” districts with Residential as a “permitted use.” <p>This clarification supports the requests for the focus of the ZOAM to be on agricultural soils in general versus only for parcels developed under the cluster subdivision option.</p>

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6	How many acres have been placed in a conservation easement in the past ten years? Of that total, how much of that acreage is prime soils?	<p>Number of Conservation easements recorded in past 10 years (1/01/2011 to 5/26/21): 148</p> <ul style="list-style-type: none">Number of parcels: 722Acreage: 16,682 (approximately)Over 15,000 Acres (15422.76) of Gift easements were recorded.Over 1,200 Acres (1258.99) of Development easements were recorded. <p>Notes:</p> <p>1. Staff is still working to determine the Prime Agricultural Soil acreage included in these easements.</p> <p>7/7/21:</p> <ul style="list-style-type: none">Total acreage of Conservation Easements in County: Approx. 78,000 acresTotal acreage of Prime Soils in Conservation Easement: Approx. 21,000 acres	<p>FINDINGS</p> <ul style="list-style-type: none">The time horizon used by Staff for conservation easements (1/2011 to 5/26/2021) is <u>17 months longer</u> than the time horizon used for Cluster quantification (7/2020 to 7/1/2021). <p>Therefore, the time horizons require adjustments to provide a valid comparison. The following is easement data for the time horizons indicated:</p> <table><tr><th>Time Horizons</th><th>Type</th><th># Easements</th><th># Parcels</th><th>Acres</th></tr><tr><td>Jul 2010—Dec 2010</td><td>Gift</td><td>4</td><td>5</td><td>673</td></tr><tr><td>Jul 2010—Dec 2010</td><td>Dev.</td><td>2</td><td>22</td><td>87</td></tr><tr><td>Jan 2011—Jun 2020</td><td>Gift</td><td>97</td><td>271</td><td>13,578</td></tr><tr><td>Jan 2011—Jun 2020</td><td>Dev.</td><td>21</td><td>389</td><td>1,163</td></tr><tr><td>Jul 2020—May 2021</td><td>Gift</td><td>24</td><td>60</td><td>2346</td></tr><tr><td colspan="5">TOTALS for</td></tr><tr><td colspan="5">Jul 2010-May 2021</td></tr><tr><td></td><td>Gift</td><td>125</td><td>336</td><td>16,598</td></tr><tr><td></td><td>Dev.</td><td>23</td><td>411</td><td>1,251</td></tr><tr><td></td><td>TOTAL</td><td>148</td><td>747</td><td>17,848</td></tr><tr><td colspan="5">STAFF TIMEFRAME</td></tr><tr><td colspan="5">Jan 2011-May 2021</td></tr><tr><td></td><td>Gift</td><td>121</td><td>331</td><td>15,924</td></tr><tr><td></td><td>Dev.</td><td>21</td><td>389</td><td>1,163</td></tr><tr><td></td><td>TOTAL</td><td>142</td><td>720</td><td>17,088</td></tr><tr><td colspan="5">COMPARISON</td></tr><tr><td colspan="5">w/ Cluster Data</td></tr><tr><td colspan="5">Jul 2010—Jul 2021</td></tr><tr><td></td><td>Gift</td><td>101</td><td>276</td><td>14,251</td></tr><tr><td></td><td>Dev</td><td>23</td><td>411</td><td>1,251</td></tr><tr><td></td><td></td><td>124</td><td>687</td><td>15,502</td></tr></table> <p>Source: Loudoun <u>GeoHub</u> Conservation Easements data file as of 5/19/2021</p> <p>Note: Per Loudoun Mapping, the values calculated for Total acreage of Conservation Easements (~78K ac.) and Total Prime Soils in Conservation Easements (~21K ac.) are values for the ENTIRE county, not only the Rural Policy Area.</p>	Time Horizons	Type	# Easements	# Parcels	Acres	Jul 2010—Dec 2010	Gift	4	5	673	Jul 2010—Dec 2010	Dev.	2	22	87	Jan 2011—Jun 2020	Gift	97	271	13,578	Jan 2011—Jun 2020	Dev.	21	389	1,163	Jul 2020—May 2021	Gift	24	60	2346	TOTALS for					Jul 2010-May 2021						Gift	125	336	16,598		Dev.	23	411	1,251		TOTAL	148	747	17,848	STAFF TIMEFRAME					Jan 2011-May 2021						Gift	121	331	15,924		Dev.	21	389	1,163		TOTAL	142	720	17,088	COMPARISON					w/ Cluster Data					Jul 2010—Jul 2021						Gift	101	276	14,251		Dev	23	411	1,251			124	687	15,502
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7	How many homes may be built by right in the future under the current zoning ordinance in the Rural Policy Area, including cluster vs. non-cluster?	<p>Remaining Potential By-Right Residential Units in the RPA: 11,896</p> <p>Notes:</p> <ol style="list-style-type: none"> The information above is for the Rural Policy Area only and does not include the Towns or JLMA. Staff is still analyzing data to provide the number of potential clustered units vs. potential non-clustered units and will provide that information as soon as it is available. <i>7/7/21: Staff has examined the current build-out data and determined that differentiating the number of cluster vs. non-cluster units will take several more weeks. Therefore, staff requests further direction from the TLUC regarding this effort.</i> Assumptions: <ol style="list-style-type: none"> Total assumes build-out of the RPA. Rural 40 parcels that are 40 or more acres and Rural 20 parcels that are 20 or more acres (excluding A-3 zoned land, see below) are assumed to develop as cluster developments. Rural 40 parcels that are less than 40 acres and Rural 20 parcels that are less than 20 acres (excluding A-3 zoned land, see below) are assumed to develop as non-cluster. 	<p>FINDINGS: Potential By-Right Residential Units in RPA as of October 2020 (using Staff assumptions): 11,098.</p> <ul style="list-style-type: none"> This is within a reasonable range from Staff's 2017 calculation of 11,896, prepared in 2018 for the 2019 Comp Plan (p.11), given easements and new businesses filed over the past 2 years. However, Assumption 3b confirmed Staff's build-out numbers for all 20+ and 40+ parcels "are assumed to develop as cluster developments," making clusters the default development option. Based on inquiry to prior 2019 Comp Plan Stakeholder members this had not been stated, or clearly known, previously. <p>In defense of Staff, the level of effort to differentiate the number of cluster vs. non-cluster units <u>is</u> very complex and time-consuming. To demonstrate the complexity and impact:</p> <ul style="list-style-type: none"> Review of eighteen (18) <i>SAMPLE</i> parcel groupings under common ownership (Attachment B**) showed that: <ul style="list-style-type: none"> 206 parcels (41 cluster-eligible parcels, 165 <20 or <40 ac) <i>when recombined and clustered</i> could become 709 lots, for an increase of 503 lots. (See Assumptions for impacts.) (**Does <u>not</u> include all "common ownership" potential clusters) <p>ASSUMPTIONS – conflicts in data</p> <ul style="list-style-type: none"> Assuming 20+ and 40+ parcels will <u>develop as clusters</u> (Assumption 3b) supports ZOAM-2020-0002 applying to all future cluster development to protect prime soils and RPA farmland. However, Staff's Assumption C that all <20 and <40 acre parcels will "develop as non-cluster" likely <u>understates the total build-out results and long-term impacts on soils and RPA farmland.</u> This is due to the volume of parcels: <ul style="list-style-type: none"> <u>under single ownership</u> of multiple sizes (< and > cluster minimums) that can be <u>recombined and apply the cluster ordinance</u> development. <p>Attachment B Sample 18 parcel groupings demonstrate this. Common ownership parcels in many areas are held by developers and LLCs "ready to develop" can be seen on the GIS maps provided.</p>

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		<p>d. When the Rural Policy Area's zoning was remapped in 2006 to be in compliance with Revised General Plan, some parcels retained their A-3 zoning class, which is a denser land use than the remapped zoning and planned land use allowed.</p> <p>e. For the Rural Policy Area's A-3 zoned parcels that are vacant or under-developed, the maximum number of units allowed for a parcel is determined using the Zoning Ordinance's maximum zoning density for the A-3 zoning class.</p> <p>f. A parcel of less than one developable acre is assumed to not be developable due to the acreage needed to accommodate well and/or septic.</p>	<ul style="list-style-type: none"> Development of parcels <20 and <40 acres, as well as existing parcels under common ownership that may <u>not</u> use the cluster ordinance <u>supports ZOAM-2020-0002 being expanded to protect prime soils for any development type.</u> <p>Potential By-Right Residential Units in RPA as of October 2020 (using Staff assumptions):</p> <table border="1"> <thead> <tr> <th>Zoning</th><th>Vacant Ac</th><th>Vacant Qty Parcels</th><th>AR1-AR2 Cluster Calc</th></tr> </thead> <tbody> <tr><td>A10</td><td>753.2</td><td>36</td><td>36</td></tr> <tr><td>A3</td><td>751.32</td><td>112</td><td>112</td></tr> <tr><td>AR1-20+</td><td>14660.75</td><td>303</td><td>2932</td></tr> <tr><td>AR1-10-19</td><td>5764.75</td><td>441</td><td>441</td></tr> <tr><td>AR1-10-</td><td>6798.31</td><td>1734</td><td>1734</td></tr> <tr><td>AR2-40+</td><td>6169.89</td><td>57</td><td>411</td></tr> <tr><td>AR2-20-39</td><td>1265.62</td><td>45</td><td>45</td></tr> <tr><td>AR2-10-19</td><td>1428.73</td><td>115</td><td>115</td></tr> <tr><td>AR2-10-</td><td>828.96</td><td>257</td><td>257</td></tr> <tr><td>Sub-Total</td><td>38,421.53</td><td>3,100</td><td>6,083</td></tr> <tr> <td></td><td>Improved Acres</td><td>Improved Qty Parcels</td><td></td></tr> <tr><td>A10-10+</td><td>1660.23</td><td>125</td><td>125</td></tr> <tr><td>A10-10-</td><td>183.92</td><td>41</td><td>41</td></tr> <tr><td>A3-20+</td><td>838.45</td><td>7</td><td>167</td></tr> <tr><td>A3-0-19</td><td>752.22</td><td>272</td><td>272</td></tr> <tr><td>AR1-20+</td><td>38448.38</td><td>653</td><td>7689</td></tr> <tr><td>AR1-10-19</td><td>20916.96</td><td>1729</td><td>1729</td></tr> <tr><td>AR1-10-</td><td>25073.43</td><td>6675</td><td>6675</td></tr> <tr><td>AR2-40+</td><td>15668.4</td><td>125</td><td>1044</td></tr> <tr><td>AR2-20-39</td><td>3376.07</td><td>127</td><td>127</td></tr> <tr><td>AR2-10-19</td><td>4911.76</td><td>394</td><td>394</td></tr> <tr><td>AR2-10-</td><td>3070.43</td><td>746</td><td>746</td></tr> <tr><td>Sub-Total</td><td>114,900.25</td><td>10,894</td><td>19,009</td></tr> <tr><td>GRAND TOTAL</td><td>153,322</td><td>13,994</td><td>25,092</td></tr> <tr><td>Total Qty Parcel Increase w/ Cluster</td><td></td><td></td><td>11,098</td></tr> <tr><td>% Inc</td><td></td><td></td><td>179%</td></tr> </tbody> </table>	Zoning	Vacant Ac	Vacant Qty Parcels	AR1-AR2 Cluster Calc	A10	753.2	36	36	A3	751.32	112	112	AR1-20+	14660.75	303	2932	AR1-10-19	5764.75	441	441	AR1-10-	6798.31	1734	1734	AR2-40+	6169.89	57	411	AR2-20-39	1265.62	45	45	AR2-10-19	1428.73	115	115	AR2-10-	828.96	257	257	Sub-Total	38,421.53	3,100	6,083		Improved Acres	Improved Qty Parcels		A10-10+	1660.23	125	125	A10-10-	183.92	41	41	A3-20+	838.45	7	167	A3-0-19	752.22	272	272	AR1-20+	38448.38	653	7689	AR1-10-19	20916.96	1729	1729	AR1-10-	25073.43	6675	6675	AR2-40+	15668.4	125	1044	AR2-20-39	3376.07	127	127	AR2-10-19	4911.76	394	394	AR2-10-	3070.43	746	746	Sub-Total	114,900.25	10,894	19,009	GRAND TOTAL	153,322	13,994	25,092	Total Qty Parcel Increase w/ Cluster			11,098	% Inc			179%
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Findings and Identification of Conflicts in Data Review -- July 20, 2021



	TLUC/Board Questions	County Staff Responses	WCC REVIEW
8	<p>If the cluster ordinance is revised to protect 80% of prime soils on the by right properties identified in Question 7, how many homes may be built by right in the future?</p> <ul style="list-style-type: none"> This answer should also include a chart formatted like the one in question 5 showing future clustered parcels and prime soils used. 	<p>Staff is still analyzing data to respond to this question.</p> <p>7/7/21: This requires revisions to the existing methodology utilized for the County's residential Build-Out and a full build-out analysis for the Rural Policy Area based on that revised methodology. This is an extensive process that will require significant staff resources and likely take several months to complete. Therefore, staff requests further direction from the TLUC regarding this effort.</p>	<p>Additional Information:</p> <ul style="list-style-type: none"> Per an email from DPZ GIS Planning (May 29, 2020), the original build-out methodology was a "one-time" calculation based on a process described below. The methodology was and is not a dynamic data field that can be modified to test various impacts (e.g., the request to protect 80% of prime soils and resulting by-right homes). The original methodology, however, is similar in concept to requests made via ZOC input and ZOAM focus group meetings for a "subtraction method" to enable prime soil and developable acres analysis on a per parcel and per application basis to protect prime soils on any and all properties in the RPA. ZOC and ZOAM request have been made as part of the Zoning Ordinance Rewrite since May 2020 to determine whether the <u>enCodePlus table calculation function</u> can be enabled for this purpose. <p>D. Gibson, 5/29/2020 DESCRIPTION: The LU_DEVELOPABLE_PCT field was originally created to use in the development of the now retired Build Out GIS Layer.</p> <p>The retired Build Out layer identified the residential developable percent of a parcel based on the ownership and environmental constraints. It was calculated by combining the environmental/land use constraints listed below as their own GIS layer and "removing" it from the parcel in a GIS analysis to determine how much of the parcel was available for development.</p> <ul style="list-style-type: none"> OWNERSHIP – TOWN, COUNTY, STATE, FEDERAL, HOA, MWAA, GOLF COURSE ownership Environmental –Steep slopes, conservation easements, Limestone soils, highly sensitive mountainside overlay districts, floodplain, LDN 65 Airport Impact Overlay <p>The Developable Percent is the remaining parcel acreage outside the constraints divided by the parcel's entire acreage.</p> <p>The Build Out layer and methodology was retired with the adoption of the Loudoun County General Comprehensive Plan in June 2019.</p> <p>The new plan uses Place Types as a land use methodology and is more flexible for land use and a set methodology can't be applied.</p> <p>Currently the land use parcel layer contains that field, as it was current as of July 1, 2019. It will be an internal discussion if that field is continued to be updated or the ownership/environmental factors need to change.</p>

Findings and Identification of Conflicts in Data Review -- July 20, 2021

ATTACHMENT A: RURAL CLUSTER SUBDIVISIONS IN WESTERN LOUDOUN: APPROVED OR PLAT UNDER REVIEW 2006-2020																	
	Staff 5/7/20	Myers, Hummel, Zicht 3/8/21	Staff Active 6/16	Staff Approved 6/16	PROJECT #	PROJECT NAME	ZONING	Total LOTS	AREA	Prime Soil Ac (Staff)	HOUSES BUILT as of 7/2021	Cluster Lots	Rural Econ Lots	Open Space Lots	Submitted	APPROVED	Cluster Base Density
1		1			SBPR-2005-0013	LAUREL HILL	AR-1	4	40.16		3	3	1		09/01/05	04/24/06	2.01
1		1			SBPR-2006-0008	HICKORY VIEW	AR-1	4	40.75		3	3	1		06/15/06	02/22/07	2.04
1		1			SBPR-2006-0009	SYCAMORE KNOLL	AR-1	3	30.00		2	2	1		06/16/06	03/19/07	1.50
1		1			SBRD-2006-0026	WALNUT RUN	AR-1	9	81.30		8	8	1		08/02/06	12/06/07	4.07
1		1			SBRD-2006-0027	MAPLE SPRINGS	AR-1	7	70.50		6	6	1		08/02/06	02/06/08	3.53
					5	2005 to June 2010		27	263		22	22	5	0			13
1		1			SBRD-2009-0023	MEETING HOUSE FARM	AR-1	18	90.45		5	16	2		10/07/09	10/15/10	4.52
1		1			SBRD-2009-0027	SILCOTT SPRINGS II	AR-1	8	60.70		7	7	1	1	11/12/09	06/22/11	3.04
1		1			SBRD-2008-0066	STONEHOUSE FARM (Keena Farm)	AR-1	14	61.49		9	13	1		11/07/08	12/28/11	3.07
1		1			SBRD-2011-0039	SIMPSON ESTATES	AR-1	9	70.40		1	8	1		08/18/11	04/16/13	3.52
1	1	1		1	SBRD-2014-0051	CREST AT WATERFORD	AR-1	31	158.10	17.24	18	25	6		11/12/14	07/09/15	7.91
1	1	1		1	SBPR-2015-0004	LONGVIEW CREST SEC 1	AR-1	5	21.03	9.18	4	3	1	1	03/12/15	01/11/16	1.05
1	1	1		1	SBPR-2015-0011	BLACK OAK CREEK	AR-1	35	175.30	55.27	12	29	6		09/22/15	11/10/16	8.77
1	1	1		1	SBPR-2015-0005	LONGVIEW CREST SEC 2	AR-1	13	50.50	10.22	12	8	2	3	03/21/16	12/05/16	2.53
1	1		1		SBPR-2017-0009	CREIGHTON HILLS	AR-1	42	204.90	29.96	37	37	2	3	4/25/2017	ACTIVE	10.25
1	1	1		1	SBPR-2017-0009	CASKEY FARM	AR-1	31	142.40	87.87	16	28	3		10/16/17	05/08/19	7.12
1	1	1		1	SBRD-2017-0020	TOUCHSTONE FARM SEC 1	AR-1	7	36.60	20.35	1	6	1		12/05/17	05/22/18	1.83
1	1	1		1	SBPR-2018-0008	THE RIDINGS PARCEL 3, Grubb Farm	AR-1	10	50.30	38.94	0	8	2		10/25/18	05/14/20	2.52
1	1	1		1	SBPR-2018-0012	MILLERS RESERVE	AR-1	21	128.65	37.90	0	17	4		12/11/18	04/22/20	6.43
1	1	1	1		SBPR-2019-0003	TOUCHSTONE FARM SECTION 2	AR-1	10	50.30	11.83	1	9	1		03/08/19	08/11/20	2.52
1	1	1	1		SBPR-2019-0013	DOWNEY FARM	AR-1	10	52.66	31.42	1	8	2		05/09/19	12/15/20	2.63
1	1	1		1	SBPR-2019-0016	SHORT HILLS VIEW	AR-1	10	50.60	23.37	0	8	2		06/04/19	06/23/20	2.53
1	1	1		1	SBPR-2019-0019	HUNT RIDGE PRESERVE 2	AR-1	8	41.93	12.65	0	6	2		06/27/19	06/10/20	2.10
1	1	1	1		SBPR-2006-0008 SBPR-2019-0021	LAKEFIELD	AR-1	7	36.45	20.36	1	6	1		08/30/19	5/26/2021	1.82
1	1		1		SBPR-2019-0020	GREENFIELDS SPORTING CLUB	AR-2	4	62.24	8.47	3	3	1		8/30/2019	ACTIVE	3.11
1	1	1	1		SBPR-2019-0025	HUNT RIDGE PRESERVE 3	AR-1	21	90.63	28.41	0	14	4	3	12/16/19	02/28/21	4.53
1	1			1	SBPL-2010-0001	ZIAI PROPERTY	AR-1	16	128.65	49.91	15	15	1			8/5/2013	6.43
					21	July 2010 to July 1, 2020		330	1764	493	143	274	46	11			88
1		1			SBFM-2020-0001	CHAPMAN FAMILY SUBDIVISION	AR-1	6	26.91		1	4	1	1	07/23/20	ACTIVE	1.35
1					SBPL-2020-0003	Huntwick	AR-1	27	131.09		1	20	6	1	7/21/2020	ACTIVE	6.55
1		1			SBPR-2020-0009	MAIN TREE FARM	AR-1	19	76.63		1	12	3	4	08/18/20	ACTIVE	3.83
29	17	25	6	11	3	After July 1, 2020		52	235		3	36	10	6			12
					29 PROJECTS	TOTAL LOTS		409	2262	493	168	332	61	17			113
						Averages		14.10	77.99								

Findings and Identification of Conflicts in Data Review -- July 20, 2021

ATTACHMENT B: Parcels Under Common Ownership SAMPLE Clusters**																				
Current Acres		115.64	283.41	181.89	291.37	321.58	145.37	235.3	87.25	190.4	234.9	221.93	159.59	321.11	300.9	466.59	226.23	196.33	568.14	4547.93
Current Qty Parcels		6	5	15	7	5	12	14	13	8	24	13	13	18	13	21	8	3	8	206
Qty 20+ ac or 40+ ac		<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>7</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>4</u>	41
Qty lots < 20 or <40 ac		4	3	15	4	2	11	13	10	7	22	11	11	11	9	19	7	2	4	165
Total Lots: Clustering		23	56	36	58	64	29	47	17	38	46	44	31	64	60	31	15	13	37	709
Qty Parcels Clustering		18	43	28	45	49	23	37	13	30	38	34	24	50	46	18	9	8	22	535
Qty RE Lots		5	13	8	13	15	6	10	4	8	8	10	7	14	14	13	6	5	15	174
Increased Lots (houses)		17	51	21	51	59	17	33	4	30	22	31	18	46	47	10	7	10	29	503
Percentage Increase																				
REV 1993 Zoning Ordinance		AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-1	AR-2	AR-2	AR-2	AR-2	
a Gross Acres		115.64	283.41	181.89	291.37	321.58	145.37	235.3	87.25	190.4	234.9	221.93	159.59	321.11	300.9	466.59	226.23	196.33	568.14	
b Cluster Density allowed		5	5	5	5	5	5	5	5	5	5	5	5	5	5	15	15	15	15	
c Lot Yield (max)	=a/b	23.13	56.68	36.38	58.27	64.32	29.07	47.06	17.45	38.08	46.98	44.39	31.92	64.22	60.18	31.11	15.08	13.09	37.88	
d Rounding down		23	56	36	58	64	29	47	17	38	46	44	31	64	60	31	15	13	37	
e 70% open/Rural Econ Lot: Acres =	=a*.70	80.95	198.39	127.32	203.96	225.11	101.76	164.71	61.08	133.28	164.43	155.35	111.71	224.78	210.63	326.61	158.36	137.43	397.70	
f Min lot size for Rural Econ lot		15	15	15	15	15	15	15	15	15	15	15	15	15	15	25	25	25	25	
g Qty of Rural Econ lots allowed	=e/f	5.40	13.23	8.49	13.60	15.01	6.78	10.98	4.07	8.89	10.96	10.36	7.45	14.99	14.04	13.06	6.33	5.50	15.91	
h Rounding down		5	13	8	13	15	6	10	4	8	8	10	7	14	14	13	6	5	15	
i Avg Rural Econ lot size	=e/h	16.2	15.3	15.9	15.7	15.0	17.0	16.5	15.3	16.7	8.0	8.0	8.0	8.0	8.0	25.1	26.4	27.5	26.5	
j Remaining cluster lots: Acres =	=a-e	34.69	85.02	54.57	87.41	96.47	43.61	70.59	26.18	57.12	70.47	66.58	47.88	96.33	90.27	139.98	67.87	58.90	170.44	
k Qty of cluster lots	=d-h	18	43	28	45	49	23	37	13	30	38	34	24	50	46	18	9	8	22	
l Avg size of Cluster lots	=j/k	1.9273	1.9773	1.9488	1.9425	1.9689	1.8961	1.9078	2.0135	1.9040	1.8545	1.9582	1.9949	1.9267	1.9624	7.7765	7.5410	7.3624	7.7474	
** Does NOT include all "common ownership" parcels / potential clusters																				

SAMPLE: 18 sets of Parcels under Common Ownership

Using the total acres of the combined parcels, an estimation of cluster lots was prepared to determine the potential increase in total lots using the cluster development option. For the sample 18 groups, the total of 206 parcels increased to 709 parcels with the cluster estimation. Of note is of the 206 parcels 80% (165) were parcels <20 or <40 acres.

Findings and Identification of Conflicts in Data Review -- July 20, 2021

ATTACHMENT C

Item 9, Envision Loudoun – Delivery of Draft Comprehensive Plan
Board of Supervisors Business Meeting
July 19, 2018
Page 11

Figure 4. Countywide Residential Units at Build-Out (July 2017)

Total Housing Units at Build-Out as of July 1, 2017

Policy Area	Existing/Permitted Units	Remaining Units	Total Units (Build-Out)
Suburban	88,502	25,588	114,090
Transition	6,296	5,086	11,382
Rural	14,505	11,896	26,401
JLMA	5,091	1,980	7,071
Towns/Dulles International Airport	20,389	3,789	24,178
County Total	134,783	48,339	183,122



WHAT'S AT RISK

July 18, 2021

Prepared by
Maura Walsh-Copeland
Walsh-Copeland Consulting, LLC

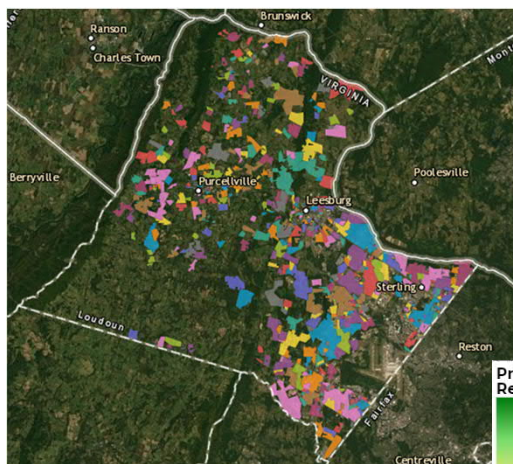


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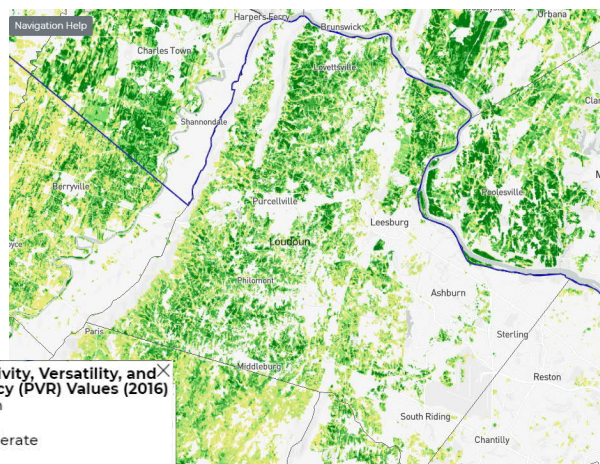
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Loudoun Subdivisions: AR1 & AR2, 2005-2020

Loudoun Subdivisions*



Loudoun Nationally Significant Agricultural Land**



Walsh-Copeland Consulting, LLC

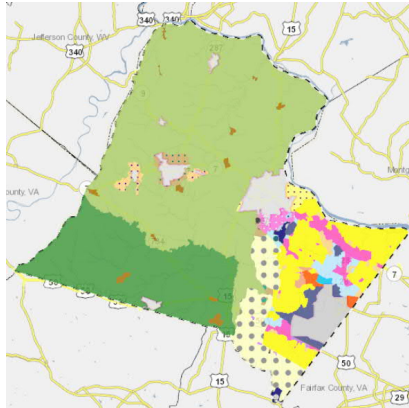
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*SOURCE: Loudoun County Mapping GeoHub

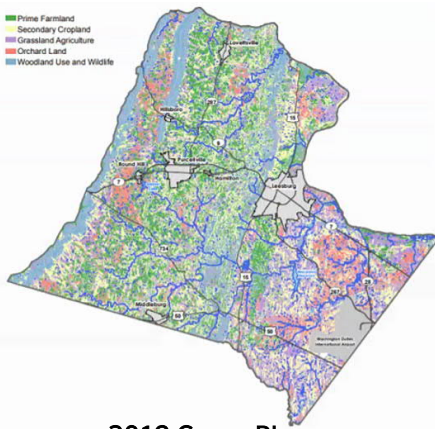
** American Farmland Trust, 2016 - www.farmlandinfo.org

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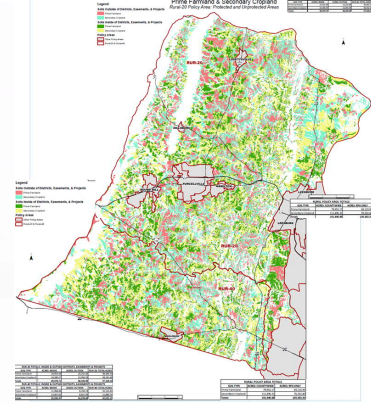
Policy Areas to Prime Ag Soils



2019 Comp Plan

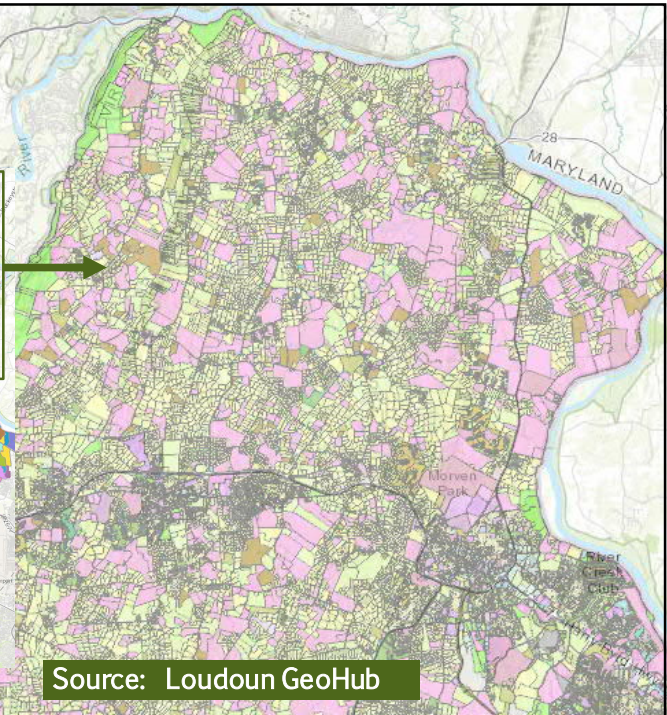
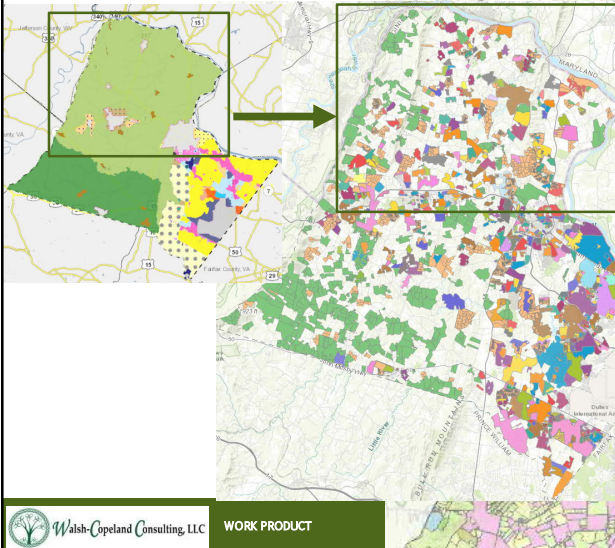


2019 Comp Plan



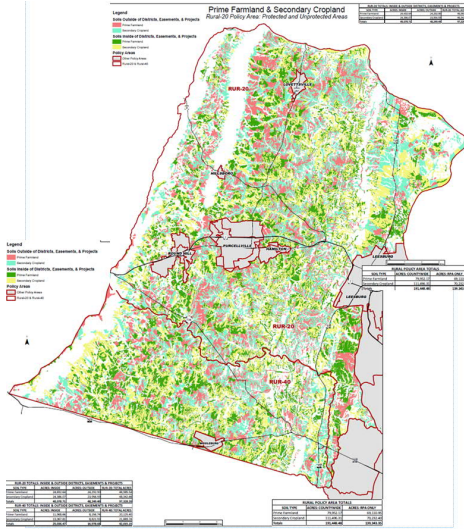
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Policy Area to Communities & Parcels



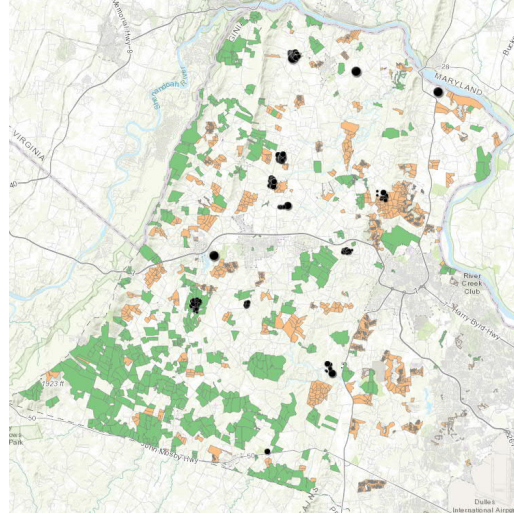
Source: Loudoun GeoHub

Prime Soils & Secondary Cropland



WORK PRODUCT

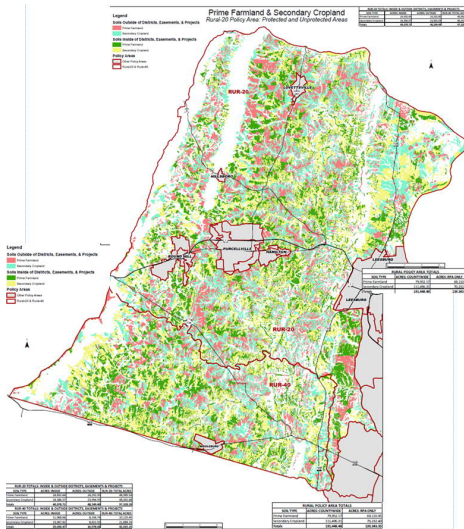
Easements & Clusters



Source: Loudoun GeoHub Data files

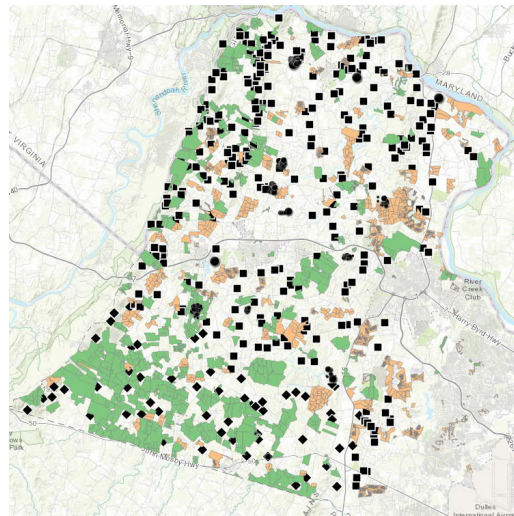
5

Prime Soils & Secondary Cropland



WORK PRODUCT

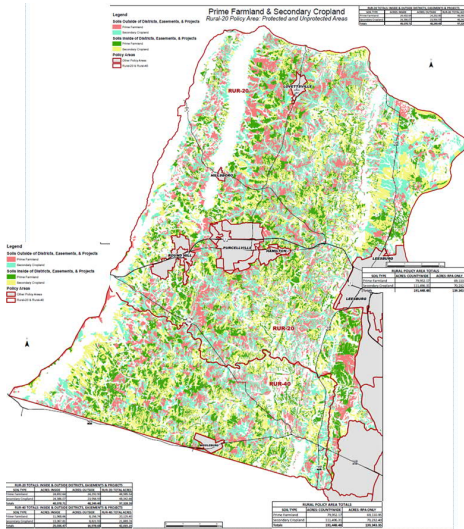
Easements, Clusters, & 20+/40+ Vacant Parcels



Source: Loudoun GeoHub Data files

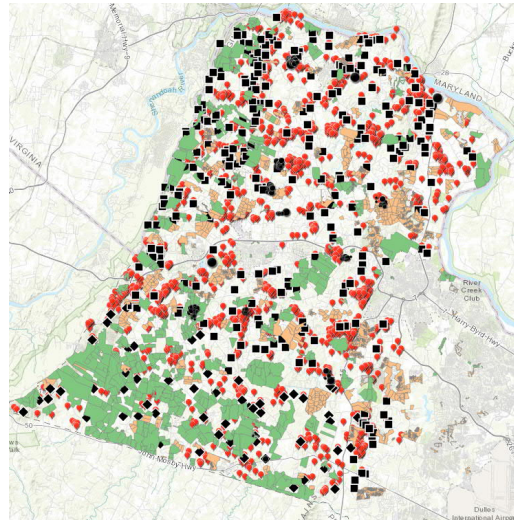
6

Prime Soils & Secondary Cropland



WORK PRODUCT

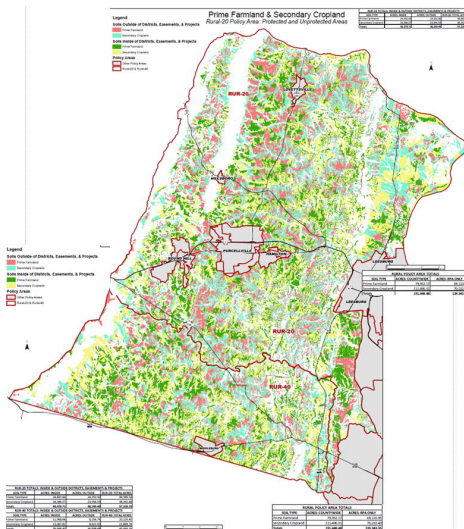
Easements & Clusters, 20+/ 40+ Vacant & Single Owner Recombined



Source: Loudoun GeoHub Data files

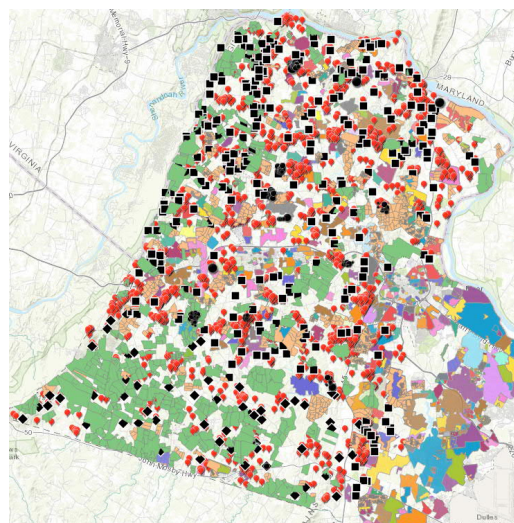
7

Prime Soils & Secondary Cropland



WORK PRODUCT

Easements, Clusters, 20+/ 40+ Vacant & Recombined w/Res Communities



Source: Loudoun GeoHub Data files

8