

TO: Bill Vetter, Pierce County Council Performance Audit Committee
FROM: The Barney & Worth Team
CC: ARL Project Team
DATE: September 12, 2016 (Revised)
SUBJECT: *A Fresh Look at Pierce County Agriculture:*
Findings and Recommendations

Introduction

A multi-disciplinary team led by Barney & Worth, Inc. is taking *A Fresh Look at Pierce County Agriculture*. Team members have extensive skills and expertise in agricultural, scientific, land use, legal, and economic analysis. (A roster of consultant team members appears in an appendix.)

The Washington State Growth Management Act (GMA) requires counties to designate Agricultural Resource Lands (ARL) which “have long-term significance for the commercial production of food or other agricultural products”. Pierce County places a high priority on protecting commercially viable agricultural lands, and has established these criteria for Agricultural Resource Lands:

- Located outside Urban Growth Areas (UGAs)
- Five acres or greater
- Contain 50% or more “prime farmland” soils
- Grass/legume production yield of 3.5 tons per acre or greater
- 50% of abutting parcels larger than 1 acre
- Landowners may request the designation

The consultant team has analyzed the current condition of Pierce County’s agriculture sector and evaluated the effectiveness of the County’s zoning regulations for protecting agricultural lands. The County’s current ARL criteria have been reviewed, with consideration given to alternatives that might better suit Pierce County’s agriculture sector. A series of nine technical memoranda illuminate Pierce County’s ARL designation and other aspects of farmland protections.

The purpose of this report is to:

- Summarize the results of the consultant team’s independent review of Pierce County’s current criteria for designating Agricultural Resource Lands.
- Present findings regarding the effectiveness of Pierce County’s ARL criteria in protecting commercially viable agricultural lands.
- Recommend changes in Pierce County’s ARL criteria that:
 - Meet the stringent legal requirements of Washington State’s Growth Management Act; and
 - Are a good fit for the current and emerging conditions facing Pierce County’s agriculture sector, today and for the foreseeable future.

About Pierce County Agriculture

Pierce County's agriculture sector has been a mainstay of the county's economy from the days of earliest settlement. Today, there are up to 4,500 producers cultivating 48,000 to 50,000 acres with total receipts of \$90 to \$100 million annually.

Agriculture is prevalent in all parts of rural Pierce County, with a wide range of crops and products. There are four primary areas for agricultural production offering markedly different growing conditions, soils, and terrain that accommodate different crops/products.

Puyallup/Orting Valley

The two main river valleys in the county have rich, deep, highly productive alluvial soils. The agricultural land is intensively farmed and supports the widest range of vegetable and fruit crops grown in the county. Farm sizes vary from less than five to a few hundred acres.

Central/South County (the largest agriculture district)

This district is dominated by livestock production, with beef, eggs and livestock including sheep and goats. With upland elevations of 200 to 600 feet, the soils and cooler temperatures do not support production of many fruit and vegetable crops. Much of the area is forested.

Bonney Lake/Buckley Plateau

Much of the agricultural land here is terraced for small and mid-size farms. While the soils support many crops found elsewhere in the county, cooler temperatures lead growers to produce feed corn, hay, silage, and berry crops including blueberries and strawberries.

Peninsula

Key Peninsula and Anderson Island are characterized by small-scale vegetable and fruit farming that serves local markets, plus some livestock production. The desirability of homesites along Puget Sound, dense tree cover, and soils not well suited for crops are limitations for agricultural production.

The acreage devoted to agriculture in Pierce County, and the total income, have remained steady over the past decade. However, the typical farm is continuing to decrease in size and profitability. U.S. Census of Agriculture data reveals only half as many farms with sales above \$100,000 per year survived by the end of the 2002-2012 decade.

As farms shrink – some now 5 acres or smaller – it is becoming increasingly difficult for farmers to sustain their economic viability. With profitability uncertain for agricultural operations, there's growing pressure countywide to convert farmland to other uses. Meanwhile, Pierce County's population continues to grow steadily at around 1% annually.

Findings – Current ARL Criteria

The Barney & Worth team’s findings on the effectiveness of Pierce County’s current ARL criteria:

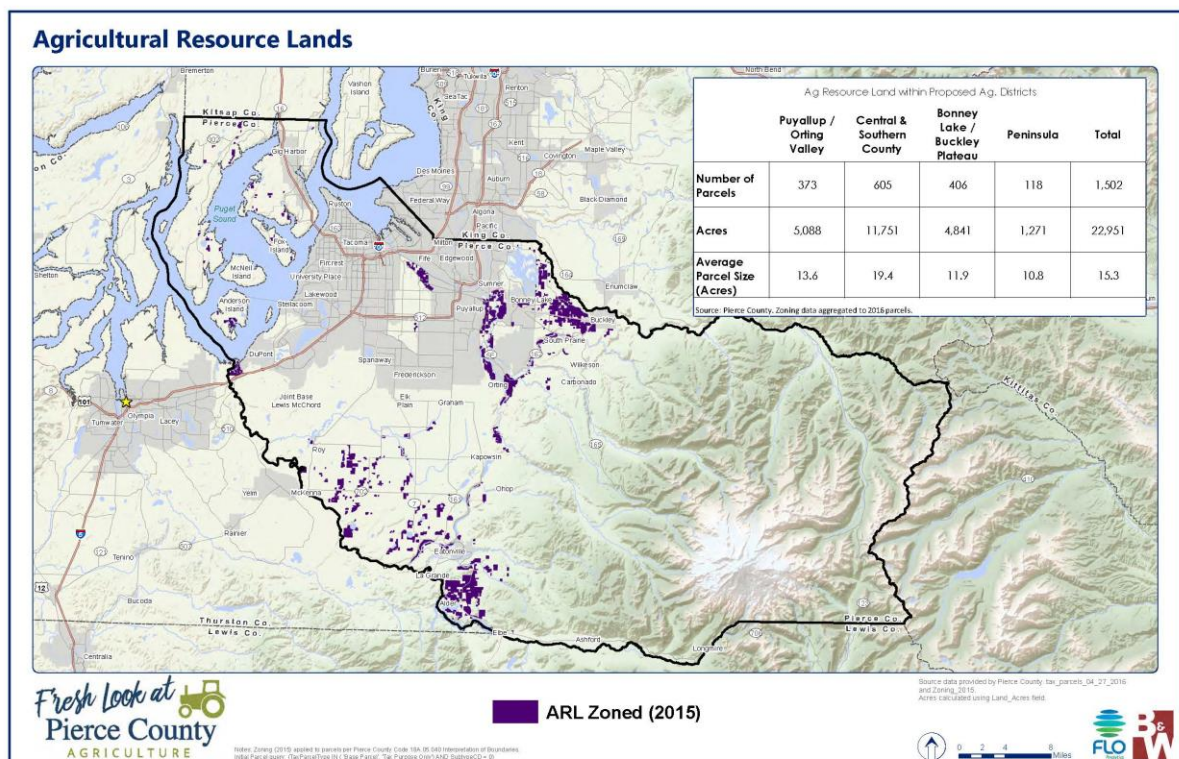
1. Pierce County’s current ARL criteria are in compliance with GMA.

The Barney & Worth team evaluated Pierce County’s existing ARL designation criteria and determined they fully comply with the Washington Growth Management Act and related decisions by the Growth Management Hearings Board. The Pierce County criteria are also similar to those adopted by other Washington counties, with only a few exceptions. **There is no legal imperative at this time to make changes to Pierce County’s current ARL criteria.**

2. The current pattern of ARL zoning doesn’t protect Pierce County’s most productive farmland.

The practical effects of Pierce County’s ARL criteria have raised concerns, however. First, only 23,000 acres are designated for ARL zoning in Pierce County – even though around 50,000 acres are being currently farmed (a number which held steady over the past decade). Second, the map of ARL zoned land shows a “shotgun” pattern – a widely dispersed patchwork of small, separate parcels (see Figure 1). **The intent of the Growth Management Act for ARL is to provide area-wide protection, creating larger districts that are free from competition to convert farm parcels and where farming practices can continue unimpeded.**

Figure 1 – Pierce County Agricultural Resource Lands (ARL) – 2015



3. The current countywide ARL criteria do not respond to important differences among the agricultural production areas.

Some production areas in Pierce County are characterized by small farms, intensely cultivated. Other areas are primarily rangeland suitable for grazing livestock. The “one size fits all” approach does little to reflect and respect these differences.

4. The current criteria have other technical problems.

An unintended consequence of the current ARL criteria is they systemically exclude most large farm sites, which often hold the most promise to sustain commercially viable agricultural production. Another technical issue is that Pierce County’s current definition of prime soils includes several specific soil types that do not readily support cultivation.

5. ARL designation has no direct impact on taxing districts.

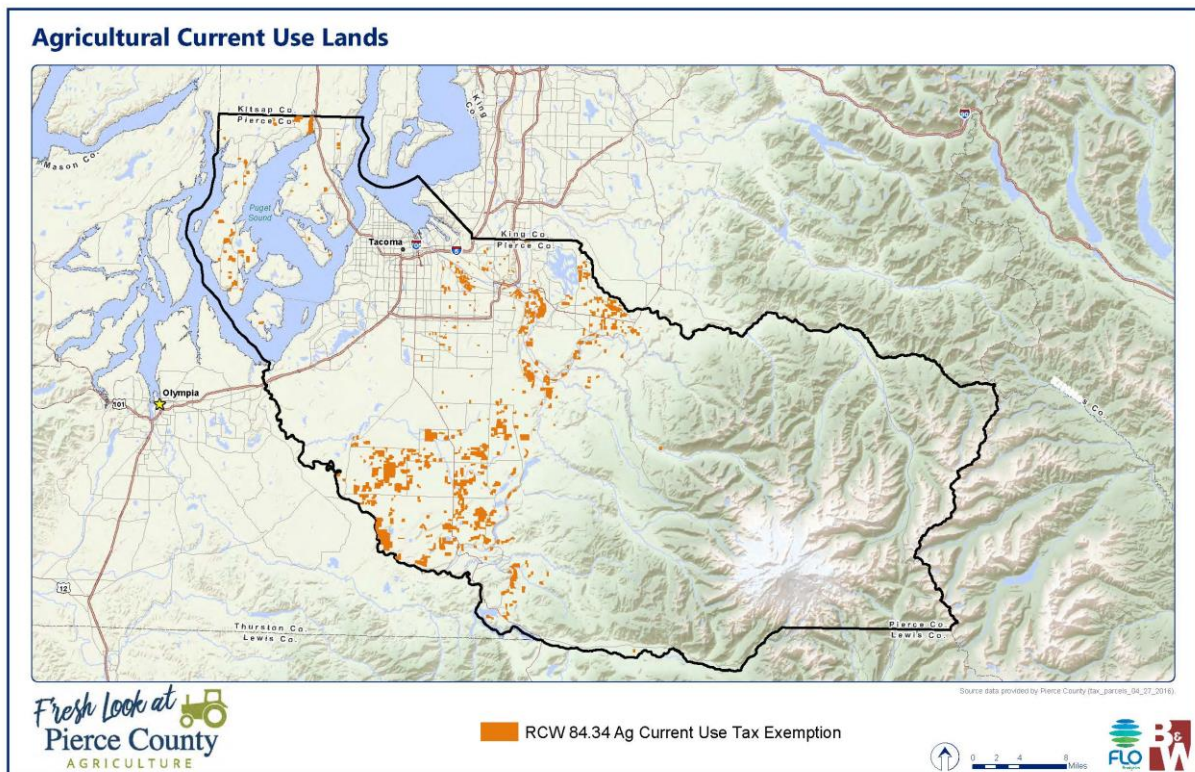
Finally, a concern has been raised over the possible impacts on local taxing districts of ARL designation. Agricultural land typically has lower property values and produces less tax revenue for local jurisdictions than land that is developed with structures – for residential, commercial or industrial uses. This is universally true whether the land is designated ARL or not. Otherwise, the Barney & Worth team’s research confirms taxing district revenues are not directly affected by ARL zoning. Property owners who qualify for an agricultural tax exemption must apply through the Current Use (CU) program under RCW 84.34 (Open Space Taxation Act). **The ARL designation itself has no direct impact on taxing districts.**

Also, the effects on taxing districts of the CU program are limited. Tax exempt agricultural lands are widely distributed (see Figure 2). While fourteen school districts are affected, the assessed value of CU properties represents less than 1% of each district’s total assessed value. Effects are somewhat greater for some of the thirteen fire and EMS districts affected by CU tax exemptions in rural Pierce County. Three districts with the highest proportions of CU valuation lose 8% to 12% of their total valuation. The bottom line: the designation of more (or less) land for ARL protection has no consequence for taxing districts. And because the ARL designation cannot be applied to urban parcels, the agricultural land is no less valuable (for taxation purposes) with the ARL protections in place.

6. ARL zoning alone is not enough to protect Pierce County’s best farmland.

The secret is finding more ways to sustain the profitability of our local commercial agriculture. Fortunately, current market forces include a “buy local” movement that opens channels for growers to sell their products locally (and more profitably). And there is an array of programs emerging to keep farmland in cultivation and assist farmers.

Figure 2 – Current Use (CU) Tax Exemption (2016)



The consultant team's findings are substantiated by extensive analysis documented in a series of nine technical memoranda (see box). The conclusions are further supported through involvement of key stakeholders in the local agriculture sector and other interested members of the public.

A Fresh Look at Pierce County Agriculture

Technical Memoranda

- #1 – Analysis of Pierce County's Agriculture Sector
- #2 – Review of Washington Growth Management Hearings Board Decisions
- #3 – ARL Designation Criteria in Selected Counties
- #4 – Success Factors for Pierce County Agriculture
- #5 – Assessment of Long-Term Trends
- #6 – Evaluation of Pierce County Zoning Regulations
- #7 – Evaluation of Pierce County's Current ARL Criteria
- #8 – Impacts of Agricultural Exemptions on Taxing Districts
- #9 – Other Approaches to Protect Agricultural Land

Evaluating Pierce County’s Current ARL Criteria

While there is not a legal imperative to alter the current criteria Pierce County uses to designate Agricultural Resource Lands, other factors weigh in favor of making improvements that:

- Protect more agricultural land.
- Extend the ARL protections over wider areas.
- Tailor the ARL criteria to better reflect different conditions in the various agriculture production districts within the county.
- Update the criteria in recognition of current trends in farming.

An evaluation of Pierce County’s current ARL criteria is discussed below and summarized in the accompanying table. For each criterion, the table shows whether it complies with the Growth Management Act, is used in other counties, can be evaluated using readily available data, and would be possible to vary by district. The table also provides feedback on the criteria offered by knowledgeable stakeholders.

Evaluation of Pierce County's Current ARL Criteria

Current Pierce County ARL Designation Criteria	Complies with GMA/ WGMHB	Used in Other Counties	Data Available	Possible to Vary by District	Stakeholder Feedback
Located in a rural area (outside UGA)	✓	✓	✓		Workable – but UGA boundaries change
5 acres or greater	✓	✓	✓	✓	Is 5 acres too small? Should contiguous parcels be considered?
Contains at least 50% prime farmland soils	✓	✓	✓	✓	No consensus on definition for prime farmland soils Greenhouses/other production doesn't require prime soils 50% is arbitrary; too high for larger sites
Grass/legume yield of 3.5 tons or more per acre	✓		✓		Arbitrary, unique, outdated, and confusing – not based on real productivity or Pierce County's typical crops. 3.5T/acre is not a high standard
50% of abutting parcels larger than 1 acre	✓	✓	✓	✓	1-acre limit seems random, too small
Landowners may request designation	✓	✓	NA	✓	"Anybody should be able to designate their land ARL" This option is not widely known

Results of Stakeholder Outreach:

To help inform the ARL evaluation the consultant team organized opportunities for public input, including:

- Interviews with a cross-section of farmers, rural landowners and other key stakeholders.
- A series of public meetings, and public testimony invited at Pierce County Council presentations.
- A survey open to farmers, landowners, taxing districts and other interested participants.

- Media coverage in the *Tacoma News Tribune* (including an editorial in support), and on KPLU radio and television news.

In early stages of the evaluation, the consultant team conducted a series of interviews with a cross-section of persons involved in the local agriculture sector: landowners, large/medium/small farmers and producers across the county, land conservation groups, agricultural and farmers market organizations, and taxing districts. Interviews were conducted in-person and by telephone with more than 25 persons.

Participants were asked to share their perceptions about Pierce County agriculture, along with their vision and suggestions for the future. Advice was sought on ways to protect agricultural land, and specific to ARL designation. The observations, insights and suggestions provided by the individuals who participated contributed to subsequent phases of the evaluation.

Points offered by stakeholders who were contacted during the interview process:

1. **There's near-consensus support for protecting Pierce County's best farmland and sustaining the economic viability of local agriculture.** Agriculture still represents an important share of Pierce County's economy, with \$90 million to \$100 million in annual sales – worthy of the County's best efforts to assure its future. Many observers think time running out to save the best, most productive farmland: "I'm glad the County is taking this seriously!"

Strengths of Pierce County Agriculture

- Good quality soils
- \$90 to \$100 million per year in sales
- Affluent, growing market area: 2 million people live within 30 miles
- Diversified crops and products
- Ecology-minded, sustainable producers
- Strong "buy local" and "eat local" trend
- Increased direct market channels: farmers markets, CSAs, restaurants sourcing local products, online sales

2. **There is little shared understanding of ARL and how it works, and no agreement on how ARL designation criteria should change.** Beyond those three letters – ARL – details of the program aren't well known even within the farming community. Stakeholders say the revised criteria should be "science-based" and designate only "true ARL acres" – but offer few details on how to choose.
3. **On balance, most stakeholders think the amount of ARL land designated today is too little or about right.** While some participants don't want to see additional acreage set aside, none hope for a reduction in the current ARL total acreage.

4. **The vastly different growing conditions and types of farmland /ranchland across the county make it difficult to find a single solution for ARL.** Today, local agriculture “is more than row crops” – wineries, animals, aquaculture, etc. – with many crops and products not solely tied to the productivity of soils. Observers wonder whether ARL criteria might be rewritten to respect these differences.
5. **Other farmland protections (beyond ARL) are broadly supported and thought to be equally or more important than ARL.** Most agree that a robust ag program in Pierce County is more important than setting aside ARL farmland. “These incentives need to be taken together”; “ARL doesn’t stand alone.” Tax incentives, purchase/transfer of development rights, conservation easements, right-to-farm statutes, farmers markets and other direct market channels, agri-tourism, and direct assistance to farmers are among the tools widely acclaimed by participants. If the right support programs are in place, productive farmland can continue to be productive with/without the ARL designation.
6. **Some farmers ask “is it too late”?** The right time for steps to protect Pierce County farmland was 20 years ago, some of the multi-generation farmers say. There’s skepticism the trend toward fewer, smaller farms can be reversed. And with many new farmers relying on a second job, the question of profitability is being raised. Local observers would like to see farm incomes rise, with the hope of attracting and retaining more farmers.
7. **Stakeholders are looking forward to an independent, expert evaluation that points the way to needed improvements in Pierce County’s program to protect farmland.** Participants see this as an educational process that will shed new light on the topic, alleviate controversy, and allow Pierce County to move on.
8. **One need identified is for a reliable financial analysis and forecast for impacts on the taxing districts impacted by agricultural exemptions.** Some observers are aware that school districts are concerned, but remain skeptical that taxing districts are truly impacted by the ARL designation. While these observers understand the districts’ worries about the erosion of their tax bases when already operating in a precarious environment, they also believe farms are not a major consumer of public services and “farmers still pay taxes.” It’s still unclear to most observers whether the ARL zone accounts for a greater farm tax break than the state’s current use exemption.
9. **Stakeholders want to stay involved – to “be at the table” – when decisions are made on changing the ARL designation criteria and/or program.** Even those who say they have no direct connection to the ARL question ask to be kept informed, and most say they would be willing to attend a meeting on this subject.

In addition to the interviews, a survey was conducted and widely publicized to interested parties. The survey questions tested participants’ response and views on the consultant team’s preliminary recommendations published in July. Participants could respond online or via paper surveys distributed at three public meetings in August. In the end, a total of 208 stakeholders completed the survey. Highlights of the results are summarized below:

- Most survey respondents are farmers and/or rural landowners (51%). Rural and urban residents are equally represented (33% each).
- More than two-thirds (69%) support designating four agriculture production districts.
- Nearly three-quarters of respondents (74%) concur with dropping Pierce County’s grass/legume

productivity criterion.

- More than half of participants (59%) back changes to the prime soils criterion.
- Similarly, 68% want to retain two more current criteria without change:
 - Located outside UGA (statutory requirement)
 - Landowners may request ARL designation
- All other methods to protect prime farmland (beyond ARL designation) tested in the survey are supported by 60% to 83% of respondents. Most popular are property tax incentives (83%), farmers markets and other direct market channels (82%), low interest loans to purchase farmland/equipment (82%) and land trusts/conservation easements (79%).
- Receiving less support are the proposals to:
 - Reduce minimum parcel size in some districts (23% support/49% oppose).
 - Increase the minimum requirements for the size of abutting parcels (28% support/48% oppose).
- Many participants say they are still “not sure”. Responses for each question range from 18% to 28% “not sure”.

Recommendations

Agriculture Production Districts

The consultant team’s first recommendation is to create four Agriculture Production Districts, covering the major agriculture centers within the Pierce County totaling 283,313 acres:

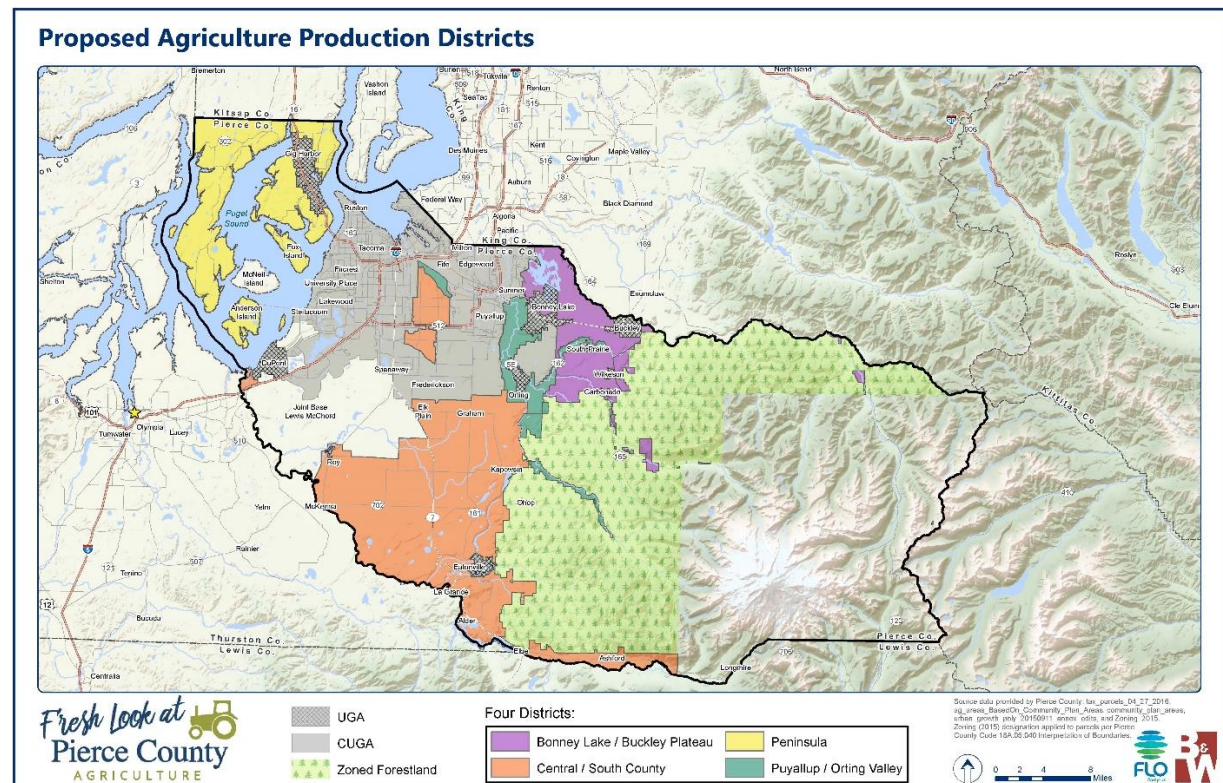
Puyallup/Orting Valley (19,996 acres)

Central/South County (156,831 acres)

Bonney Lake/Buckley Plateau (39,127 acres)

Peninsula (67,359 acres)

Figure 3 shows the Agriculture Production Districts proposed by the consultant team for Pierce County's ARL designation.



The Growth Management Act allows counties to adopt ARL criteria either countywide or by district. Adopting ARL criteria specific to each district will enable Pierce County to protect the most productive farmland in each district, in light of that area's unique historic uses, local land ownership patterns, growing conditions, soils and terrain.

ARL Criteria

Highlights of the consultant team's recommendations for changing Pierce County's current ARL designation criteria:

1. *Located outside urban growth areas*

No change is recommended.

2. *Five acres or greater*

This criterion is recommended to be increased and to vary by district. Pierce County's 5-acre minimum parcel size is the smallest in the state and too small to ensure commercial viability of individual farm operations. The minimum site size is recommended to be raised to 10 acres for the Puyallup, Bonney/Buckley and Peninsula districts. For the Central/South County district, a much larger 40-acre minimum is more appropriate.

3. *Contains 50% or more “prime farmland” soils*

This criterion is recommended to be modified and to vary by district. State law requires that ARL criteria consider prime soils. As written, however, Pierce County’s criterion may unintentionally eliminate some of the larger, more productive and worthy sites. As an example, a 100-acre parcel with only 49 acres in prime soils would be eliminated – even though its 49 acres in prime soils would be among the County’s largest prime farmland sites. To address this issue, the consultant team recommends altering the criterion to say 50%+ prime soils – or – a minimum of 20 acres of prime soils. With the prevalence of high quality soils in the Puyallup/Orting district, the recommended criterion in that district would require only 25% or 10 acres of prime soils. The consultant team’s soils scientists determined that Pierce County’s current ARL zoning definition of prime soils includes several specific soil types that do not readily support cultivation. A change is recommended to correct this inconsistency (detailed in an appendix).

4. *Grass/legume production yield of 3.5 tons per acre or greater*

This criterion is recommended to be dropped. Although the grass/legume standard is used across the nation as a measure of farmland productivity, it doesn’t suit Pierce County where hay and legumes are not among the leading agricultural products. This ARL criterion is unique among Washington counties, and land owners and other stakeholders in the local agriculture community remain baffled about how this became the standard that so dramatically reduces ARL-eligible land. One issue with dropping this criterion – there is no suitable substitute. However, to a great extent this criterion duplicates the purpose of the previous criterion requiring 50% or more prime farmland soils.

5. *50% of abutting parcels larger than 1 acre*

This criterion is recommended to be modified, and vary by district. The purpose of this criterion is to ensure ARL zoned land is surrounded primarily by other farmland. A more typical standard in other counties is a 5-acre minimum for 50% of abutting parcels. Analysis shows Pierce County’s 1-acre minimum – the state’s smallest standard for abutting parcels – contributes to the patchwork of small, separate, scattered ARL parcels. The recommended substitute criterion would increase the minimum to 50% of abutting parcels at + 20 acres or greater in Central/South County and 5 acres in Bonney Lake/Buckley Plateau and Peninsula districts, while retaining the current 1-acre standard for the smaller Puyallup/Orting Valley districts, where urban encroachment has been pervasive. The recommended methodology for determining conformance with this criterion is a calculation based on the percentage of the site perimeter meeting the 50%+ standard. (Public rights-of-way are not considered as a part of the site perimeter.)

6. *Landowners may request the designation*

Currently, Pierce County landowners who receive the CU (Current Use) tax exemption may request ARL designation for their farmland – even if that parcel doesn’t meet the other criteria. However, this voluntary ARL designation isn’t widely known or understood in the agriculture community. **Modifications to this criterion are recommended to simplify and publicize more widely the voluntary ARL designation option.** There’s some potential to better achieve the objectives stated above by:

- Contacting any property owners who are removed from ARL designation through implementation of these recommendations, to inform them of their right and the procedure to request the ARL designation.
- Publicizing the opportunity for farmland owners to request the designation through Pierce County’s website and other channels.
- Mailing a notice annually to all CU tax exempt property owners to inform them of their automatic eligibility for ARL zoning.
- Relaxing the requirement that applicants for voluntary ARL designation must also qualify for the Current Use agricultural tax exemption. As a substitute, the consult team recommends. Pierce County adopted the requirements shown below:

Recommended Procedure to Request Voluntary ARL Designation

Applications for voluntary ARL designation will be accepted as part of the County’s annual “Comprehensive Plan” amendment process.

To qualify for voluntary ARL designation:

1. Parcel must be located outside urban growth area.
2. Parcel must meet the minimum ARL site size requirement for that Agriculture Production District.
3. Parcel must be certified for the Current Use agriculture tax exemption under RCW 84.34

- or -

Be currently devoted primarily to agricultural production, with annual farm income of at least \$1,500 per year.

4. Owner must agree the voluntary ARL designation will continue for a minimum 10-year period.

Land that no longer qualifies for ARL zoning must be rezoned. Wherever appropriate, these parcels should be rezoned RF – Rural Farm, a designation that retains most of the protections of ARL.

Comprehensive Strategy for Farmland Protection

As demonstrated in this study, the Agricultural Resource Land designation alone is not enough to protect Pierce County’s best farmland and ensure its ongoing commercial viability for agricultural production. There are already abundant programs in place working toward this same goal, at the federal-state-local government levels, and many operated by non-profit organizations.

The consultant team recommends that Pierce County develop a *Farmland Conservation Strategy* then using a strategic review of the available programs and services to identify possible gaps to address or enhancements needed to fulfill the County’s commitment to the local agriculture sector and better meet the underlying goals of the Growth Management Act.

As one option, some counties have used public funds to make strategic purchases of farmland. King County voters approved bond funds, backed by a property tax, to acquire development rights and protect

12,600 acres of prime farmland. King County is continuing to purchase development rights through its farmland preservation program.

A possible funding mechanism is the Real Estate Excise Tax. Washington law authorizes counties to levy a tax of up to 1% on real property transactions. The Pierce County Assessor's Office estimates a .25% tax would generate around \$4 million annually. The proceeds could be used to pay off bond-funded farmland purchases, or to build a reserve fund for future purchases.

Further Recommendations

Two additional recommendations are offered by the consultant team.

Public Lands

The County should consider which lands owned by state and local governments are to be eligible for ARL designation. The Growth Management Act exempts lands in federal and tribal ownership, and those have been excluded here from the recommended ARL zoning. State/local lands, however are not exempt under the law and those meeting the proposed ARL criteria have been included for Pierce County's consideration, including parks, open space and other properties. Land that is irrevocably dedicated to non-farm use should not be given the ARL designation.

ARL De-designation

One reason that ARL zoning is unpopular in some quarters is the view that it is difficult or impossible for property owners to change that designation. Changing ARL zoning on a single parcel requires amending the County's Comprehensive Plan – much more than a single zone change. The Comprehensive Plan amendment would likely take 1-2 years.

If a streamlined procedure were developed by the County, it might work this way. Pierce County will annually consider applications for de-designation of ARL zoning, as part of the Comprehensive Plan update process. Application fees will be waived for properties submitting a request. Reasons for removal of ARL zoning include:

- The property was designated ARL in error, and does not meet one or more of Pierce County's ARL designation criteria
- Expansion of the urban growth area now encompasses the subject parcel
- The site is no longer devoted primarily to agricultural production
- The property no longer holds long-term commercial significance for agricultural production

Successful applications for ARL zoning removal will be included in the Pierce County's annual Comprehensive Plan update.

Comparison – Preliminary Recommendations vs. Final

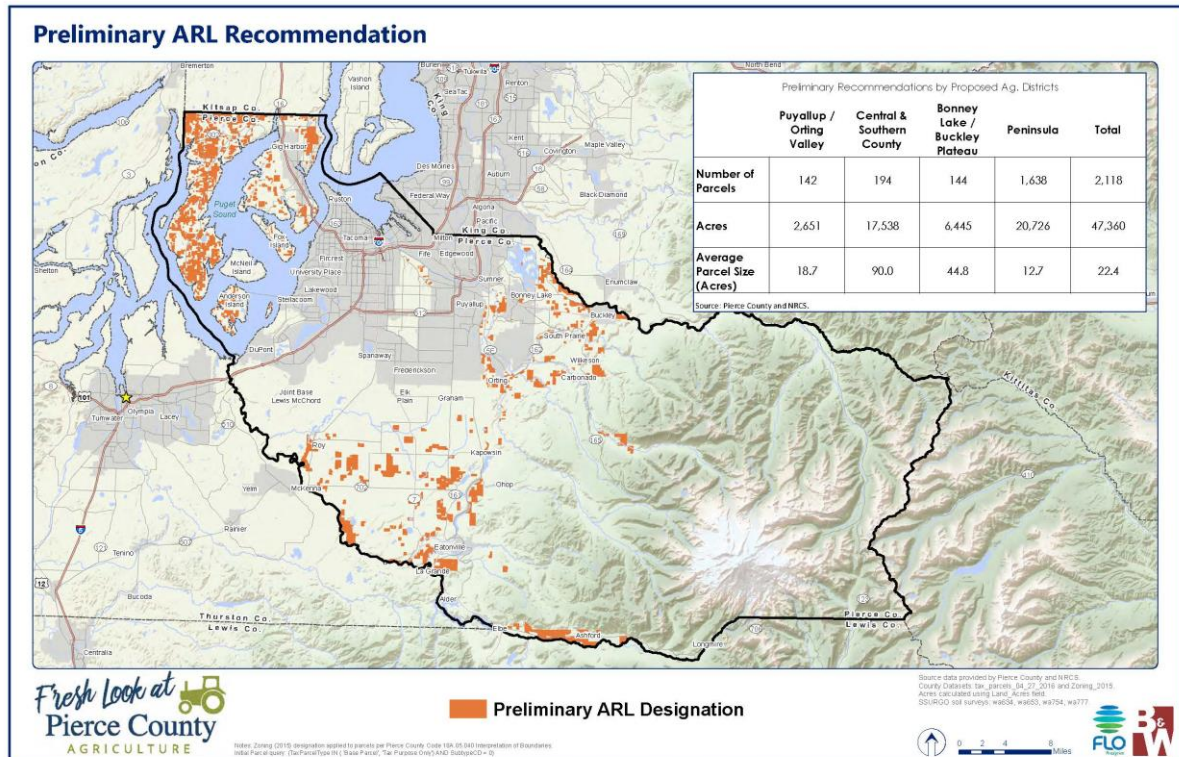
The Preliminary Findings and Recommendations submitted on July 29, 2016 proposed changes to four of Pierce County's six current ARL criteria:

1. Increasing minimum parcel sizes in some agriculture production districts
2. Altering the prime soils criterion to select parcels with 50% of prime soils – or a minimum of 20 acres.

3. Dropping the 3.5 tons per acre grass/legume productivity requirement.
4. Modifying and increasing the 1-acre standard for 50% or more of abutting parcels, district by district.

The ARL zoning pattern that would result from the preliminary recommendations is shown in Figure 4.

Figure 4 – ARL Criteria – Preliminary Recommendations

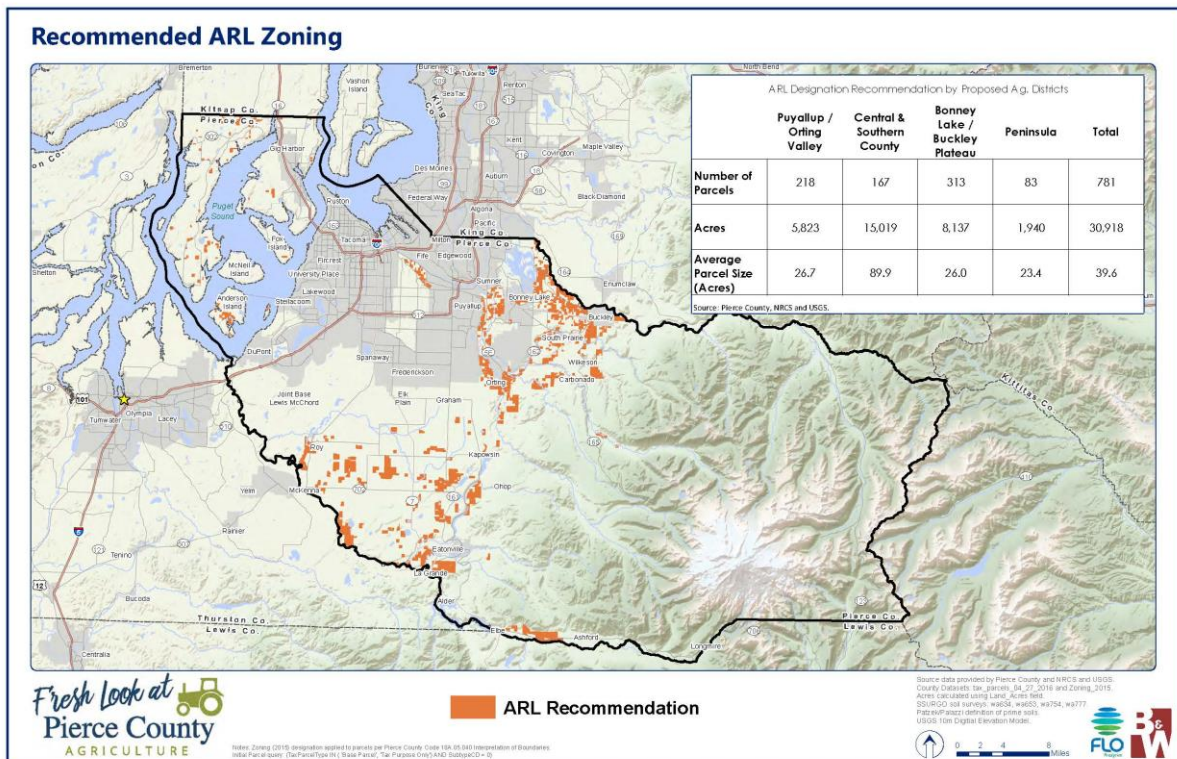


These recommendations remain in effect, but have been refined to reflect differences between districts. The preliminary recommendations have also been “ground truthed” to ensure they represent actual farming conditions and farmable land in each district.

Another change: Pierce County’s operational definition of “prime soils” has been updated to remove several soil types that do not readily support cultivation. The consultant team’s soils scientists have formed this recommendation based upon their careful review of mapping data described in NRCS Soil Surveys. Sites with elevations of 1,500 feet and higher were also dropped from the ARL prime soils inventory, due to climatic restrictions on growing conditions.

The combined effect of these refinements reduces the acreage proposed under the preliminary recommendations for ARL designation, county-wide and within each district. The final recommendations also reduce the number of ARL parcels and increase their average size in comparison with the preliminary recommendations. Figure 5 shows the effect of the modified ARL zoning recommendation.

Figure 5 – Recommended ARL Zoning



Comparison – Final Recommendations vs. Current ARL Criteria

How do the recommended ARL criteria perform in comparison with Pierce County's current criteria? A few highlights:

- As intended, the recommendations result in designating fewer ARL sites, though much larger on average. The number of ARL designated parcels is cut in half, from 1,502 now to 751. Meanwhile, the average parcel size more than doubles, growing from 15.3 acres to 39.6 acres. Along with the increase in larger sites, the concentrations of ARL designated land improve in every district.
- Total ARL acreage would increase by about one-third, from 22,951 to 30,918 acres.
- ARL designated land would increase within every agricultural production district: Puyallup (+14%); Central/South (+28%); Bonney/Buckley (+68%); and Peninsula (+53%).
- The largest ARL acreage increase is in the largest production area: +3,268 ARL acres in the 157,000 acre Central/South district.
- Even with these increases, ARL designated land would remain well below the amount being currently farmed, countywide (63% of ARL currently farmed) and in three of the four districts (48%-85%). The ARL acres to be designated in the Bonney Lake/Buckley Plateau district would somewhat exceed the acreage that is currently farmed.
- Most of the newly designated ARL zoning coincides with parcels that are currently farmed.

- As a percentage of each district's total area, the newly designated ARL zoning would range from 2.9% of the total area in the Peninsula district to 29.1% of the total area in the Puyallup/Orting district. Those percentages are consistent with what is known about the growing conditions in each district.
- In the Puyallup/Orting and Bonney/Buckley districts, there's significant convergence between "old" and "new" ARL sites. However, every district would "lose" ARL parcels/acres that qualify under the current criteria:

Current ARL Parcels to be Rezoned

Puyallup	1,603 acres
Central/South	10,120 acres
Bonney/Buckley	1,880 acres
Peninsula	719 acres
Total	14,322 acres

- Of the 22,951 acres in current ARL zoning, parcels totaling 14,322 acres would no longer qualify under the recommended criteria and would need to be rezoned.

The table below compares ARL-zoned acreage under the recommended criteria with current ARL zoned land, and also with currently farmed land, within each district and countywide.

**Comparison – Recommended ARL Criteria vs.
Current ARL Zoning and Currently Farmed***

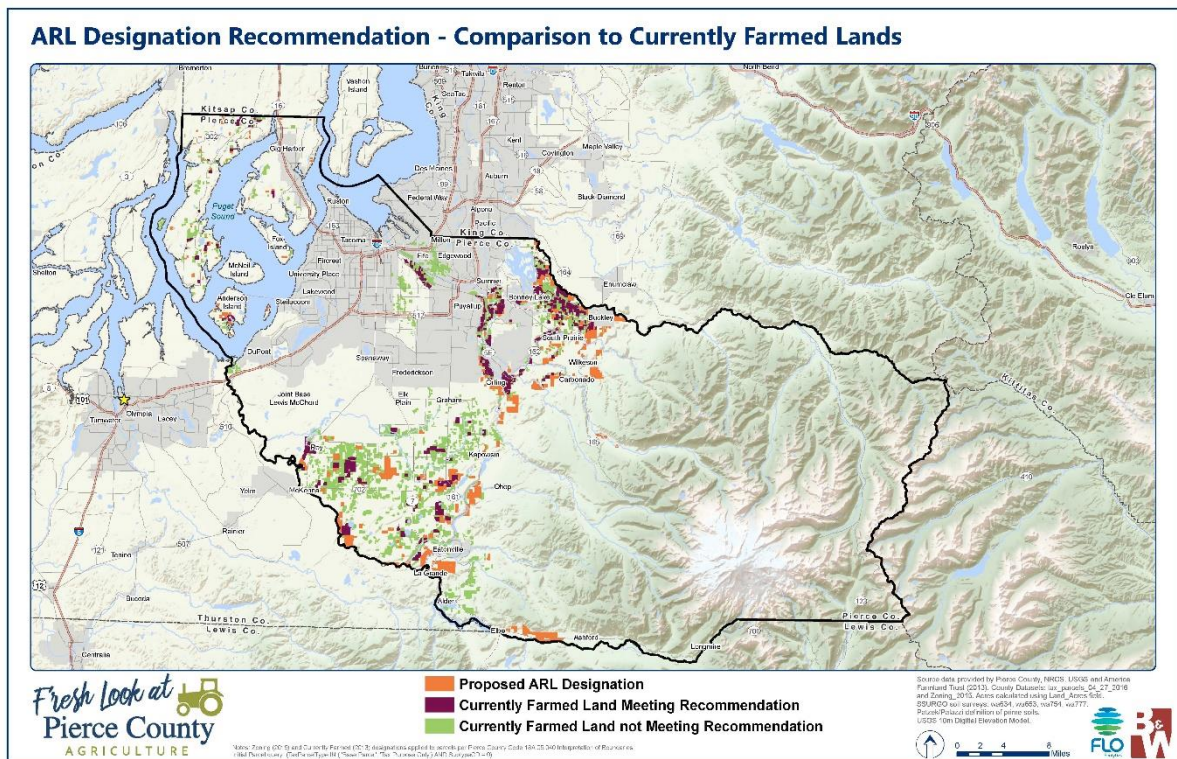
	Puyallup	Central/South	Bonney/Buckley	Peninsula	Totals
Parcels	218	167	313	83	781
– AFT	807	2,554	825	375	4,561
– ARL	373	605	406	118	1,502
Acres	5,822.7	15,019	8,137	1,939.7	30,918
– AFT	6,818	31,315	7,308	3,778	49,218
– ARL	5,088	11,751	4,841	1,271	22,951
Average Parcel Size	26.7	89.9	26.0	23.4	39.6
– AFT	8.5	12.3	8.3	10.1	10.8
– ARL	13.6	19.4	11.9	10.8	15.3
% of Total District Acreage	29.1%	9.6%	20.8%	2.9%	10.9%

*Currently Farmed: data source is the 2013 inventory by American Farmland Trust (AFT)

Figure 6 – ARL Designation Recommendation and Currently Zoned ARL



Figure 7 – ARL Designation Recommendation and Currently Farmed Land



Appendices

The Findings and Recommendations include the following appendices:

Expert Team Roster

Recommendations for the Prime Soils Criteria for Pierce County ARL Designation, Lucas Patzek, PhD and Lisa Palazzi, CPSS, PWS, August 26, 2016

GIS Maps

1. Pierce County Agricultural Resource Lands (2015)
2. Current Use Tax Exemption (2016)
3. Proposed Agriculture Production Districts
4. ARL Criteria – Preliminary Recommendations
5. Recommended ARL Zoning
6. Comparison: Recommended Zoning vs. Current ARL
7. Comparison: Recommended Zoning vs. Currently Farmed Land

Expert Team Roster



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Recommendations for the Prime Soils Criterion for Pierce County ARL Designation

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In this document we provide foundation information on soil mapping and present our recommendations on which farmland soils should be considered as “prime” in designating ARL parcels in Pierce County. This information is based on our review of mapping data described in NRCS Soil Surveys, and on NRCS definitions and classifications of farmland.

“Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the “Federal Register,” Vol. 43, No. 21, January 31, 1978.”

There are five Soil Survey areas listed in Pierce County; only two are subject to this ARL designation analysis:

1. Pierce County Soil Survey covers most of the central and west portions of Pierce County, and is subject to this ARL designation analysis.
2. Snoqualmie Pass Soil Survey covers eastern Pierce County, including Snoqualmie Pass, with portions of both King and Pierce County included. The portions of the Soil Survey within Pierce County are subject to this ARL designation analysis.
3. City of Tacoma (the highly urbanized City was excluded from the Soil Survey; no mapping is available)
4. Joint Base Lewis-McChord. ARL parcels are not designated in the Fort Lewis Soil Survey, as Joint Base Lewis-McChord is federal land, managed for military operations and not used for commercial agriculture.
5. Mount Rainer National Park. ARL parcels will not be designated in the National Park.

In addition, tribally-owned lands, forest zoned land, and McNeil Island are excluded from the ARL designation process. All other lands were included in this analysis, but recommended adjustments to the criteria are listed below.

Elevation Limitation Recommendation

We recommend excluding parcels with elevations greater than 1,500 feet across more than 50% of the parcel. These areas are found in the eastern foothills (west and north of Rainier) and in the south, and will be less productive on average than lower elevation parcels with longer growing seasons. Very little commercial agriculture occurs above that elevation in Pierce County due to more limited growing degree days, hard frosts during the growing season, excessive shading, and seasonal flooding from mountain rivers and streams.

Prime Farmland Soils Recommendations

We recommend the following changes to the current list of USDA-NRCS defined prime soils. We recommend removing from consideration the steeper classes of soils on the prime farmland list having a Land Capability Class (LCC) of 4s. The steepest class of LCC 4s soils includes those Soil Map Units described as having a slope from X to 15%, where X is variable, depending on the soil series. Specifically, these are the soils that we recommend removing from consideration:

- a. Pierce County Soil survey
 - i. SMU 1C: Alderwood gravelly sandy loam, 8 to 15 percent slopes (22,836.6 acres)
 - ii. SMU16C: Harstine gravelly ashy sandy loam, 6 to 15 percent slopes (36,985.4 acres)
 - iii. SMU18C: Indianola loamy sand, 5 to 15 percent slopes (8,307.5 acres)
- b. Snoqualmie Pass Soil Survey
 - i. SMU 1: Alderwood gravelly sandy loam, 0 to 15 percent slopes (2,615.1 acres)

Land Capability Classification (LCC) is a system used by the USDA-NRCS to group soils primarily on the basis of their capability to produce common crop and pasture plants without reducing soil quality in the long-term. Each soil map unit is assigned a capability class of 1 through 8, and classes 1 through 4 are considered capable of producing cultivated crops with good agricultural management. Class 4 soils are the most severely limited of those capable of producing crops, and they require very careful management and/or support a narrower range of crops.

A subclass (i.e., *e*, *c*, *s*, *w*) is used to describe limitations or hazards for agricultural purposes, and subclass “*s*” describes soils that have soil limitations within the rooting zone (e.g., stoniness, shallowness, low moisture-holding capacity). Pierce County farmers have generally adapted well to farming soils limited by excess water (subclass *w*), and soil erosion (subclass *e*) is not a major limitation locally with good management and on flatter terrain. However, soil limitations (subclass *s*), particularly a significant coarse fraction of stones, gravel, and/or sand, pose a major challenge to Pierce County agriculture. This is especially true on steeper terrain. These soils are difficult to cultivate, and they have low water- and nutrient-holding capacities. In the summer months, the primary growing season, they become very dry and require significant irrigation water to sustain crop productivity. Water for irrigation is often a major impediment to agriculture because water rights for agriculture are very hard to secure.

An analysis of land use patterns using Google Earth and the Web Soil Survey demonstrates that very little production agriculture occurs on 4s soils with x-15% slopes in Pierce County. Typically, these soils are left forested or they support buildings. These soils are relatively common on the Key Peninsula, in South County, and on the terraces above the Puyallup Valley. On the other hand, the flatter 4s soils do occasionally support agriculture in the county. The images on the following pages demonstrate these land use patterns:

Wilcox Farms near Roy, WA

18C: Indianola loamy sand, 5 to 15 percent slopes

The steeper Indianola soils (18C) on the farm are mostly in forest or support farm buildings and homes.



Creviston Valley Farm near Lakebay, WA

16C: Harstine gravelly ashy sandy loam, 6 to 15 percent slopes

The steeper Harstine soils (16C) support some farm fields and buildings, as well as forest. About one-half of the farm's pasture and/or farm fields overly Bow silt loam (5C), Bellingham silty clay loam (4A), and Dupont muck (12A). Thus, this farm property should still have enough prime farmland soils to be considered for ARL designation even with the removal of the 16C soil from consideration.



Farms near Buckley, WA

1C: Alderwood gravelly sandy loam, 8 to 15 percent slopes

The steeper Alderwood soils (1C) in the Buckley area are used mostly for low density residential development and forestland on the terraces above the flatter farmed lands dominated by soils like Buckley gravelly silt loam (8A).

