

# Chapter VI

## Priority Needs

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The agricultural community in Snohomish County is facing many current and projected challenges associated with increased development and a changing climate. Through a robust community engagement process, farmers provided priority resilience needs for their specific reach. This chapter documents the major themes raised during this community engagement process. The chapter is followed by eleven individual Reach Summaries (Chapter VII) that characterize existing farming and infrastructure, projected impacts to agricultural viability, and prioritized resilience needs.

Addressing the following resilience needs will require partnership building, innovative approaches to problem solving, creative thinking, and funding acquisition. Farmers highlighted the need for grant and/or loan funding to help them address many of these issues described below.

Priority needs include farmland conservation, drainage infrastructure and maintenance, compensation for upland runoff, flood protection, access to irrigation water, drought resilience practices, and additional groundwater analysis.

### Farmland Conservation

Through a stakeholder led prioritization process, PCC Farmland Trust and partners on the Snohomish Farmland Conservation Working Group identified a 10-year protection target of 15,000 acres of high priority farmland. Much of Snohomish County's commercial farmland is in the floodplain, where state and local regulations provide partial barriers to conversion of the land. Still, many farms in both the floodplains and upland areas continue to be lost to development, habitat restoration, businesses, and other uses. While this 10-year acreage target does include upland agricultural land protection goals, a focus on farms utilizing the highly productive soils of the floodplains is critical to ensure a viable agricultural system in the county.

Existing funding sources for Purchase of Development Rights (PDR) and Transfer of Development Rights (TDR) programs are insufficient to reach the 10-year protection target or satisfy farmer interest. In addition, the per acre easement payments to farmers through these two programs are often too low to incentivize participation. Potential options for increasing funding available include growing the TDR program, securing grants, and/or leveraging additional taxes.

## Drainage Infrastructure and Maintenance

Diking, drainage, and flood control districts across the County consistently report insufficient funding to manage current drainage needs, citing runoff from upland areas and increased flooding as major impacts. Climate change projections indicate increased stormwater runoff and flood frequency and scale, highlighting the need for improvements to and increased capacity of drainage systems.

Many agricultural areas require a drainage needs assessment to inform projects that would increase capacity of existing culverts, tide gates, and pump stations as well as replace aging infrastructure. Assistance acquiring and complying with permits for infrastructure improvement projects as well as regular maintenance of drainage conveyances is critical. In addition, individual farms would benefit from increased technical and funding assistance for drainage improvements.

## Compensation for Upland Runoff

Development of upland areas has resulted in increased runoff reaching floodplain areas, in many cases exacerbating drainage challenges for farmers. A few diking, drainage, and flood control districts have agreements with local jurisdictions to collect stormwater fees to help offset the costs associated with increased runoff and sediment, while most do not. There is a need to work with individual districts and local jurisdictions to help develop these compensation agreements and potentially increase revenue under existing agreements.

Projects or initiatives to reduce upland runoff would also greatly benefit farmers. These potentially include use of green stormwater infrastructure, regulatory changes to county and city development codes, and education or incentives for urban and suburban landowners and developers to reduce runoff from their properties.



## Farming a few feet above sea level

*“In drier years, farming a few feet above sea level is always a bit of a gamble. Yet as the clouds build and the winter rain falls, I wonder if it is a matter of climate change or all the development (and its consequential gutters, pavement, and sewer lines) that encircle the valley. Are we building an agricultural legacy, or an urban drain field?”*

*Nick Pate, Raising Cane Ranch, Photovoice 2017*

## Flood Protection

While farms in the floodplain are often inundated in winter months, damages are minimized and spring drainage made possible through a system of sea dikes, river levees, and riverbank protection projects. In many places, this flood protection infrastructure is in need of improvement or replacement, and in others, there is a need for additional protection. With flood frequency and severity predicted to increase, impacts to this infrastructure will increase.

In the upper reaches of the watersheds, flood protection (in the form of bank stabilization) is needed to protect against loss of farmland to a migrating river channel. In the lower floodplain, flood protection needs include levee maintenance, flood fencing and waterbreak planting to lessen sediment and debris deposition on farms. Larger landscape-scale projects or approaches to water management that increase the capacity of the floodplain or channel to store flood waters are also recommended if they lessen the impacts of flood events on farm infrastructure, protect banks, and improve agricultural productivity. Finding creative solutions to increasing water storage on farmland, while reducing the negative impacts of long-term inundation and meeting increased spring drainage needs, could provide a win-win for farm, flood, and wildlife interests.

## Access to Irrigation Water

Many farms do not have legal water rights, yet have a need for irrigation water to maintain their viability. Any withdrawal of surface water requires a water right and most commercial withdrawals of groundwater do as well. Climate change projections indicate the need for irrigation water will increase with less precipitation falling in summer months and with increasing temperatures. The Department of Ecology manages water resources in

Washington State, including the issuance of water rights. At this time, applying for new water rights is not a feasible option for farmers as basins are closed to additional water withdrawals.

There is a need for creative approaches to providing access to water for farmers. Potential options include allowance of water withdrawals or capture during winter months, on-farm water storage, and/or the coordinated management and leasing of water rights at a landscape scale.

## Assistance Implementing Drought Resilience Practices

There are numerous techniques that can be used to increase a farm's resilience to drought or to reduce the need for irrigation. Existing incentive and grant programs through the state and federal government provide cost-share funding for practices that build soil water holding capacity, hold and/or store water, and increase irrigation efficiency. These programs, however, are often highly competitive or pay low rates. With climate predictions indicating hotter and drier summers, additional funding is needed to incentivize practices such as cover cropping, no-till, compost or biochar application and agroforestry. In addition, research and/or on-farm trials of newly developing drainage infrastructure, such as controlled release of water from drain tiles or drainage ditches, is needed.

***“We may have enough water now but we may not have enough in five years. We need to be looking to the future.”***

*Jesse Allen, farmer, Photovoice 2017*

## Additional Groundwater Analysis

Further study of groundwater levels and saltwater intrusion are recommended in the estuaries of the Stillaguamish and Snohomish Rivers to validate predicted impacts of sea level rise on farmland.

In the Lower Stillaguamish River floodplain, projections for saltwater intrusion on Florence Island and in Drainage District 7 have been extrapolated from groundwater well data south of Hatt Slough. Cardno, the consultant who completed the groundwater assessment for this project, recommends collection and analysis of additional well data in these specific locations.

In the Lower Snohomish River floodplain, projections of groundwater levels on Ebey Island and in Diking Districts 2 and 4 have been extrapolated from groundwater well data on Smith Island. If increased pumping is considered as a tool to combat a rising groundwater table, further study is recommended to determine if this will result in upward migration of salty groundwater thus impacting crop yields.

## Other Needs

While the intent of this Agriculture Resilience Plan is to focus on needs and actions to make the agricultural land itself more viable and resilient to future change, farmers also provided valuable feedback into other market, research, and education-related needs. These include:

- **Assistance complying with regulations** – The costs of and time associated with complying with county and state regulations puts incredible pressure on farmers, particularly smaller operations.
- **Research into new crop varieties** – The impacts of changing land use, climate, and markets continues to necessitate research into crop varieties that are resilient, drought tolerant, salt tolerant, and/or slower to mature.
- **Improvement of market infrastructure** – Processing facilities and equipment as well as venues for selling local products would assist in market expansion.
- **Flood risk training for new landowners** – New farmers moving into the floodplain could benefit greatly from training on how to minimize flood risk by accessing flood data available through Snohomish County as well as future flood projections.