Variable Rate Irrigation (VRI) is a tool of precision agriculture that optimizes irrigation water application.

Most fields are not uniform due to natural variations in soil type or topography, but center pivot irrigation systems still apply a singular rate across the field without sensitivity to these variations. VRI technology enables farmers to more easily apply customized rates of water based on individual management zones within a field.

The most popular use for VRI in the southeast has been the elimination of water application over non-cropped areas of the field. By removing non-cropped areas from irrigation, the farmer saves both water and energy. Other potential management zone conditions include adjacent pivot overlaps, topographic and soil variations, multiple crops and crop stages, and environmentally sensitive areas.

Advantages of VRI

**Agronomic**
- More accurate water application
- Improved water use efficiency
- Reduced weed and/or disease pressure

**Economic**
- Reduced input costs (pumping, chemigation, fertigation)
- Enhanced yields and profitability

**Environmental**
- Water conservation
- Reduced runoff
- Reduced leaching of fertilizers

Funds for this project were provided by the USDA Natural Resources Conservation Service and administered by the Flint River Soil and Water Conservation District. The United States Department of Agriculture (USDA) is an equal opportunity provider and employer.

For more information, please visit flintriverswcd.org/usda-nds.

Variable Rate Irrigation: USDA-NRCS EQIP Practice Code 442

15% water savings

Savings are generated by removing non-crop areas from irrigation, coordinating application amounts with variations in the soil type and field topography, and eliminating double applications due to pivot overlap. Variable rate irrigation (VRI) can reduce water use by an average of 15%.

For more information, please visit flintriverswcd.org/resources