**Farmer Phosphorus Plots**

**Healthy Soil = Clean Water**

The Conservation Action Project (CAP) and its partners propose to deliver the following information as part of its collaboration with the Ohio Department of Agriculture (ODA) to better inform the H2Ohio program. The goal of this initiative is to better understand the agronomic and economic impacts of the H2Ohio agricultural conservation practices and systems funded by ODA. The following agricultural conservation practices taking place in conjunction with CAP will be evaluated.

CAP will carry out a study to evaluate the agronomic and economic impacts of phosphorus applications to 3 different soil test levels and ranges of phosphorus, through the course of 5 years.

1. **Side by Side Phosphorus application comparison plots**

*Objective: Evaluate the agronomic, economic, and profitability impacts of applying phosphorus over 6 different fields with 3 different soil test ranges of phosphorus.*

 *The fields will represent 2 of each of the following soil test levels of phosphorus, in parts per million (Mehlich) on a field average: less than 20 ppm, 20-30 ppm and 30-40 parts per million. Half of the site-acres will be treated as a control with “business as usual” practices, while half the site-acres will be experimental. The (controlled) side of the site will receive fertilizer applications in accordance with the producer’s VNMP using an application method of the producer’s choice. The (experiment) side of the site shall not receive any Phosphorus applications for the life of the contract.*

1. **Replicated phosphorus comparison plots**

*Objective: Evaluate the agronomic, economic, and profitability impacts of applying phosphorus over 3 different fields with 3 different soil test ranges of phosphorus.*

 *The fields will represent 1 of each of the following soil test levels of phosphorus, in parts per million (Mehlich) on a field average: less than 20 ppm, 20-30 ppm and 30-40 parts per million. Replicated sites will have (experiment) strips that do not receive any phosphorus for the life of the contract. The strips in between the experiment strips will receive (control) phosphorus as “business as usual” for that producer.*

Crop yield, crop health including tissue testing and soil testing, soil health testing and soil nutrients are the agronomic parameters that will be assessed. A trend analysis will be conducted over the course of the project lifetime on the topics of nutrient budgeting, soil test data, farmer cost of production, and cost benefit of applying phosphorus.

It is the goal that the framework developed here can be expanded and used by ODA to evaluate a broader range of farms across the Western Lake Erie Basin and State of Ohio to continually improve the data that informs farmers and policy decision making.