HOW BAY PROGRAM RESOURCES CAN HELP YOU CREATE AN IMPLEMENTATION PLAN

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PUTTING TOGETHER A PLAN

Best locations

Cost per acre

Reductions per acre

Available land

Practicability

Most effective practices
PLANNING SCALES

State

County/Conservation District

Locality/Parcel
ESTIMATING MOST EFFECTIVE PRACTICES

COST PER POUND OF TOTAL NITROGEN REDUCED TO THE CHESAPEAKE BAY FROM MARYLAND LANDS

$12.00

Dollars/lb Reduced TN Delivered to Bay

Alternative Crops | Barnyard Runoff Control | Water Quality Conservation Plan | Water Control Structures | Stream Access Control with Fencing and Grass Buffer | Agricultural Narrow Grass Buffers | Agricultural Narrow Forest Buffers | Agricultural Forest Buffers | Agricultural Grass Buffers | Loafing Lot Management
ESTIMATING MOST EFFECTIVE LOCATION

Pounds of Delivered Nitrogen Reduced/Acre of Forest Buffer

- Dauphin
- Snyder
- Northumberland
- York
- Juniata
- Lancaster
- Mifflin
- Cumberland
- Perry
- Union

Lbs N/Acre Delivered to Bay Reduced:
- 0 to -20
- -20 to -40
- -40 to -60
- -60 to -80
- -80 to -100
- -100 to -120

Map showing the distribution of Lbs N/Acre Delivered to Bay Reduced across different counties with varying colors indicating the reduction levels.
YORK COUNTY AGRICULTURAL FOREST BUFFERS EXAMPLE

• **NEED TO KNOW:**

  - How many acres are available?
  - Where can buffers be sited?
  - How much will it cost?
  - What will we get for investment? (N, P and TSS reductions)

All maps courtesy of Lindsey Gordon, Chesapeake Research Consortium
HOW MANY ACRES ARE AVAILABLE?

- There are about 65,000 acres of "buffer area" within 30 meters (approx. 100 ft) of stream.

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HOW MANY ACRES ARE AVAILABLE?

- **There are about 21,000 acres of “unbuffered area” of herbaceous (AG) land within 30 meters (approx. 100 ft) of stream.**

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### HOW MUCH WILL IT COST? WITH CAST

<table>
<thead>
<tr>
<th>Sector</th>
<th>SRBC FB Ex Baseline</th>
<th>SRBC FB Ex</th>
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</thead>
<tbody>
<tr>
<td>Urban Land</td>
<td>$40,241,670</td>
<td>$40,241,670</td>
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<tr>
<td>Septic</td>
<td>$152,291</td>
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<td>Forest Land</td>
<td>$147,478</td>
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<td>Agricultural Land</td>
<td>$8,872,883</td>
<td>$11,980,983</td>
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<tr>
<td>Animal Manure</td>
<td>$8,087,560</td>
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<tr>
<td><strong>Total:</strong></td>
<td><strong>$57,501,882</strong></td>
<td><strong>$60,609,982</strong></td>
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- **Determine 50% of bufferable ag land will be buffered**
  - (21,000 x 0.5 = 10,500 acres)
- **Use CAST (casttool.org) to estimate cost**
- **10,500 acres of forest buffer in York County costs $3.1 million annually**
  - ($60.6 million - $57.5 million = $3.1 million)
SCALING UP TO THE ENTIRE WATERSHED... WITH CAST

- **Assume 50% in each county, or about 224,000 acres**
- **Implementation costs $64.4 million annually**
EXPLORE OTHER PROGRAMS, AND REPEAT... WITH CAST
LOCAL SCALE WITH AERIAL ANALYSES

All maps courtesy of Lindsey Gordon, Chesapeake Research Consortium
LOCAL SCALE WITH AERIAL ANALYSES

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Local Scale with BayFast

- Draw a parcel
- Enter known land uses
- Enter implementation level (3 acres forest buffer on 35 acre parcel)
- Get results in seconds!
  - $880/yr
  - 27% reduction in delivered N
  - 16% reduction in delivered P
  - 18% reduction in delivered TSS
QUESTIONS