HOWARD SOIL CONSERVATION DISTRICT - TMDL INVENTORY

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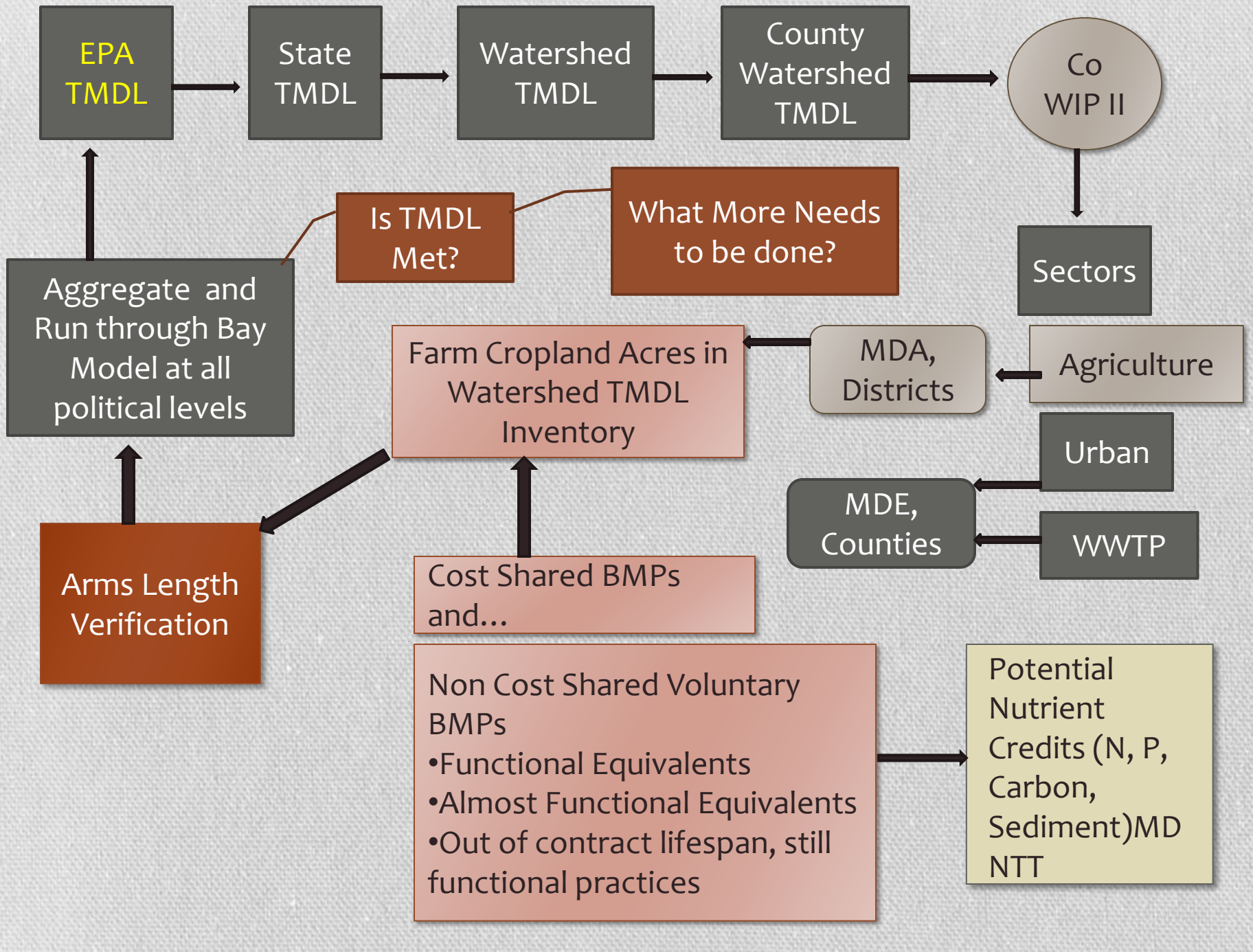
EPA TMDL
State TMDL
Watershed TMDL
County Watershed TMDL
Co WIP II
Sectors
Agriculture
MDA, Districts
Urban
WWTP
MDE, Counties
What More Needs to be done?
Is TMDL Met?
Aggregate and Run through Bay Model at all political levels
Farm Cropland Acres in Watershed TMDL Inventory
Arms Length Verification
Cost Shared BMPs and…
Non Cost Shared Voluntary BMPs
•Functional Equivalents
•Almost Functional Equivalents
•Out of contract lifespan, still functional practices
Potential Nutrient Credits (N, P, Carbon, Sediment)MD NTT

Essentials for Inclusion in Model

1. DO PRACTICES MEET SPECS, OR ARE THEY FUNCTIONAL EQUIVALENTS?

2. WHEN WERE THEY INSTALLED? PRIOR TO OR AFTER 2006?

3. WERE THEY COST SHARED OR NOT? ARE THEY IN A FEDERAL, STATE, LOCAL OR NGO DATABASE?

4. CAN PRACTICES IDENTIFIED BE VERIFIED BY TRAINED PERSONNEL?

Verification Protocol Options			Practice information that might be determined					When Implemented	Issues	
Data Gathering System	Who	How	C/S Fed	C/S State	C/S Other	Non C/S Meeting NRCS Standards	Non C/S Adaptive, Performance functional equivalent	Installation date	Requirements, Remarks	Data Quality, Quantity, Ease of data gathering
1. Farm by farm inventory	Trained or Certified Personnel	Farm Visits	Yes	Yes	Yes	Yes	Yes	Yes	Need a certification procedure, access to C/S records	High quantity and quality, time intensive and costly
2. Farmer Self Certification with onsite verification	Trained or Certified Personnel	self knowledge , farm visits	Yes	Yes	Yes	Yes	Yes	Maybe, if known	Need a certification procedure, access to C/S records, training for farmers, spot check procedures	High quantity and quality, time intensive and costly
3. Farmer Self Certification	Farmer	self knowledge	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe, if known	Need training for farmers, penalty for false reporting, spot check procedures	Lower quantity and quality, less costly
4. Use of existing federal, state or district records	District personnel	review of in office plans and documents	Yes	Yes	Maybe	Maybe	No	Yes		Partial information on practices on the ground, time consuming for existing office staff
5. Transect of County or Watersheds	Trained or Certified Personnel	Point evaluations	No	No	No	Maybe	Maybe	Maybe, if known	C/S status will be unknown, have to cross reference other databases to eliminate double counting in NEIEN	Good quality, statistically valid if designed properly, low public acceptance
6. Farmer reported at USDA FSA Office	Farmer	self knowledge	Maybe	Maybe	Maybe	No	No	No	Farmer knowledge is important, training may be needed, need to spot check	Lower quantity and quality, less costly
7. NASS Survey	NASS and Farmer	self knowledge	Maybe	Maybe	Maybe	No	No	Maybe, if known	Ground truthing needed	Could be lots of double counting with current methods of collecting data
8. Aerial Photography, remote sensing	Photo Interpreters	Photo interpretation	Maybe, if known	Maybe, if known	Maybe, if known	Maybe, if known	Maybe, if known	Maybe, if known	C/S status will be unknown, have to cross reference other databases to eliminate double counting in NEIEN, Management practices can not be determined.	Good quality, statistically valid if designed properly, low public acceptance
9. NRI Point or some other statistically selected sites	Trained or Certified Personnel	Field Spot Visits	Maybe, if known	Maybe, if known	Maybe, if known	Maybe, if known	Maybe, if known	Maybe, if known	C/S status will be unknown, have to cross reference other databases to eliminate double counting in NEIEN, Management practices can not be determined.	Good quality, statistically valid if designed properly, low public acceptance

Objectives of the Howard SCD Project

- Three (3) separate and distinct objectives. Landowner can stop at any point.

1. To determine if the agricultural sector has practices already installed to meet Ag's TMDL goal (focus on farmer funded and functional equivalents).

2. To determine if an individual farm meets the TMDL baseline, or what more needs to be done to meet the baseline.

3. See if there are tradable credits for nitrogen and phosphorus over and above the baseline, or if there could be additional practices installed that will produce credits.

Howard County Project Background

- Highly urbanizing eastern half of county, Columbia and Ellicott City
- High participation in agricultural land preservation programs in western half of county. 335 total farms, 230 in preservation program.
- County government realizes benefits of preserving good quality ag land including the environmental benefits, opportunities for trading between sectors.
- County under gun to meet TMDL goals for all sectors.
- Howard SCD proposed project to determine farmer funded BMP's on farms, how many ag pres farms meet TMDL using MD NTT and Bay watershed baseline numbers and determine opportunities for credits.
- County allocated $80,000 for the first year of project for assessments.
- HSCD has leadership using trained private contractors.

Steps For Implementing County BMP Inventory Projects

1. **Project Introduction**

a) Meet with Project Sponsors and review project scope, project steps and funding needs.

b) Meet with Project Funders to go over project proposal and funding needs.

c) Determine if you need a Project Manager to manage project.

Steps For Implementing County BMP Inventory Projects

2. Project Scope

a) Based on funding level, determine what farms will be inventoried (all farms, Ag preservation, etc.)

b) Develop letter with project sponsor/funder and send to proposed farms included in the inventory.

c) District Staff will follow up and call proposed landowner/operators to explain project, answer questions and tell them an Inventory Specialist will contact them to make an appointment.

Key Points in Howard County Letter to Landowners

- Purely voluntary,
- Will determine if their farm meets the TMDL and if landowner might have tradable nutrient credits,
- No obligation once a determination is made,
- Will work with landowner and/or farmer as appropriate,
- Private contractors working for the HSCD, gather data and will make no judgments on landowner's operation,
- HSCD always available for questions and discussion,
- Letter jointly signed by the District and County Ag Preservation Program.

Steps For Implementing County BMP Inventory Projects

3. Development and Testing of Inventory Tools

a) Develop inventory tools based on desired outcomes of project.

b) Make inventory data collection as "fool proof" as possible. (Check off boxes, circle choices, etc. to simplify and keep varied responses to a minimum.)

c) Test inventory tools on farm with landowner. Make revisions to tool and retest if necessary.

Howard County Inventory Tool

B. Practices and Programs

1) Do you have a current conservation plan? Y / N — Year Prepared: — Do you want an updated Conservation plan? Y / N

2) Are all of the BMPs on your farm accounted for in your conservation plan? Y / N / Unknown

3) Please describe which practices are in use on the farmland you manage and if you receive cost-share: (note in each field on farm map where practices are implemented)

*(If practice isn't listed in the conservation plan, please note the size/acreage of practice on plan map.) Note: if practice has **MD NTT** or **FE** symbols next to name additional information will be needed.*	Field No(s)/ Amount Installed [1]	Planned - Installed (P or I)	Need	Does Not Meet Specs- Provides Benefits (FE)*	NRCS Fund -ed	MDA Fund-	Farmer Funded	NGO Fund	Year Installed Yr/Mo/Day (It
Access Control-472-Ac.	/		☐	☐	☐				
Access Road-560-Ft.	/		☐	☐	☐				
Agrichemical Handling Facility- 309 -No.	/		☐	☐	☐				

MD NTT BMP INFORMATION (If at least one practice is present, check BMP or Planned.

1) **Alternative Watering Facility** ☐ Planned: ☐

May include any one of these or all practices below. Check the ones that are present/planned:

378 – Pond	
512 – Pasture and Hay Planting	
516 – Pipeli	
528 – Presc	
574 – Sprin evelop nt	
580 – Streambank and Shoreline Protection	
614 – Watering Facilities	
642 – Water Well	

2) **Conservation Planning on High Till** ☐ AC:_____ Planned: ☐

3) **Conservation Planning on Low Till** ☐ AC:_____ Planned: ☐

4) **Conservation Planning on Pasture** ☐ AC:_____ Planned: ☐

May include any one of these or all practices below. Check the ones that are present/planned:

560 – Access Road	412 – Grassed Waterway
311 – Alley Cropping	468 – Lined Waterway or Outlet
575 – Animal Trails and Walkways	344 – Residue Management, Seasonal
327 – Conservation Cover	555 – Rock Barrier
328 – Conservation Crop Rotation	557 – Row Arrangement
332 – Contour Buffer Strips	350 – Sediment Basin
330 – Contour Farming	585 – Stripcropping
342 – Critical Area Planting	587 – Structure for Water Control
362 – Diversion	600 – Terrace
386 – Field Border	620 – Underground Outlet

C. Cropland Management (Cont.)

Commercial Fertilization on Cropland

10) Please describe your commercial fertilization program

Field No./Crop/ Current P Value (from Soil Test)	Initial Date Applied: Month	Day	Fertilizer Amount: Total N (lbs./ac)	Total P	Side Dress Dat Applied: Month	Day
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11) Incorporation/ Injection of fertilizer:

Incorporation Date:

Month:

Day:

Incorporation depth: (in.)

D. Animal Inventory and Confinement

1) Please check off all that apply:

a) I have an implemented nutrient management plan Y / N
b) I have an implemented Soil and Water Conservation Plan Y / N
c) I have a properly sized and maintained manure storage and runoff control system Y / N

2) Approximately how many of the following types of animals did you produce in this year?

Poultry:			**Cattle:**	Total No.	# On pasture >6 mo./yr.
Number of Flocks/Year:					
Chicken Broilers	Per flock		Dairy: Milk Cow		
Chicken Layers	Per flock		Dry Cows		
Chicken Roasters	Per flock				
Chicken Pullets	Per flock		Beef		
Turkey (slaughter)	Per flock				
Turkey (breeding)	Per flock		Other (specify):		

E. Pasture Management

1) How many total acres of pasture do you have? Acres:

2) What types of pasture grasses do you have?

Crop type:	List Field Numbers / Acres/ Crop Type
pasture/pastu sses	

fallow pasture, fescue, gamma grass, hay, Indian grass, lespedeza grass, love grass, orchard grass, pasture, pasture-range, pasture- summer, pasture-winter, timothy, winter peas

3) When did you plant the pasture?	Planting date:	Planting Method: Broadcast, Aerial, No-till Drill, Drill, Other (lists)	4) When do you graze your livestock on these fields?	Animal Type: Beef cows, dairy cows, swine, horses, sheep, goats, veal, bison, lamas, alpacas, emus, other
Field No(s)	Year: Month: Day:		Start: Stop:	Type: Animal Units: Hours Grazed:
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Steps For Implementing County BMP Inventory Projects

4. Determine Staffing Needs

a) Develop Job Description and contracts for contractors (project manager and inventory specialist).

b) Advertise positions.

c) Rate applications and select individuals to interview.

d) Develop interview questions and obtain individuals to serve on interview panel (at least 3 people).

e) Interview selected applicants and rate interviews.

f) Select and offer position. Plan training sessions.

g) Determine who will be assessors, inventory verifiers and data entry personnel. (3 distinct responsibilities)

h) Have assessors, verifiers and data entry personnel sign contracts if necessary.

Steps For Implementing County BMP Inventory Projects

5. Training

a) Develop Training Handbook/Picture Book, etc.

b) Finalize contracts for contractors.

c) Conduct office orientation, describe job and go over tools that will be used. If candidate decides to go forward with project, sign contract, code of conduct, explain pay sheets, etc.

d) Conduct field training on farm with inventory tools. Check work by trainees. Conduct additional training as needed.

e) Train verifiers and data entry personnel (Tracker and MDNTT). Check work and retrain if needed.

Steps For Implementing County BMP Inventory Projects

6. Field Inventory

a)The data inventory specialist makes appointment with Landowner.

b) Specialist's first visit is accompanied by the project manager to make sure they understand what they are doing and to serve as a resource person and to add to their first interview.

c) After walking the farm, the inventory specialist fills out inventory and turns it into the Project manager, who will check work and discuss corrections needed. Project manager informs the inventory specialist if they are able to proceed on their own, or if they need to conduct an additional supervised farm visit.

d) After the inventory is completed and turned into the Project Manager it will be assigned it to a verifier. The verifier will contact the farmer and set up a time to walk the farm. The landowner's presence is not needed unless they want to be present.

e)The verifier notes changes or differences and goes over with the data inventory specialist if needed. Once in agreement, the verifier will return the original inventory to the Program Manager and it will be assigned to data entry personnel.

Steps For Implementing County BMP Inventory Projects

7. Data Entry

a) Data entry will be completed and final original copy with data entry result are returned to District Manager.

MDNTT Howard County Results*

Farm	Baseline Met?	N Red EOS	N Red to Bay	Bay N Credits Generated	P Red EOS	P Red Bay	P Credits Generated
Farmer 1	N Only	21.9	2.6	3	0	0	0
Farmer 2	Yes	42.6	35.8	36	7.5	5.4	5
Farmer 3	Yes	10.3	1.2	1	4.7	3.4	3
Farmer 4	Yes	48.1	5.8	6	10.3	7.4	7
Farmer 5	N Only	9.4	7.9	8	0	0	0
Farmer 6	Yes	443.1	367.8	368	16.4	15.6	16
Farmer 7	Yes	42.2	35.5	35	18.2	13.1	13
Farmer 8	N Only	76.3	9.2	9	0	0	0
Farmer 9	Yes	304.9	36.6	37	20.3	14.6	15
Farmer 10	Yes	217.1	26.1	26	2	1.4	1
Farmer 11	N Only	485	58.2	58	0	0	0
Farmer 12	Yes	173	20.8	21	7.5	5.4	5
SUBTOTAL		**1873.9**	**607.5**	**608**	**86.9**	**66.3**	**65**
***Version 2 MDNTT**							

Steps For Implementing County BMP Inventory Projects

8. Final Steps/Report

District Manager will maintain records of all activities and will:

- Follow up on landowner natural resources issues requiring District staff.
- Inform landowner of outcomes of the inventory and what the landowner would need to do if different outcomes are desired.
- Prepare a final report in aggregated format to distribute to sponsor, funders, participants, etc.

Observations From Howard County Project

- Project Sponsorship/Costs
- Questions by Landowners/Operators
- Hiring
- Inventory Tool
- Project Management
- Data Collection Team
- Data Entry in Conservation Tracker and MDNTT
- From early Howard County results- most farms meet the TMDL and have credits to trade. Up to 50% of the practices on farms were "farmer installed and funded" (therefore never recorded in any database or the Chesapeake Bay Model.)
- Easily transferable to other Counties and States using methods and procedures developed by Howard County SCD.

Questions?

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