

Clean Water Initiative Tracking, Accounting, Reporting

Chittenden County Clean Water Advisory Committee

March 8, 2016



Part 1: Tracking Database

- Reporting requirements
- Universe of clean water activities
- Outreach tracking
- Project-level tracking

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- Reporting requirements
- Universe of clean water activities
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- Project-level tracking



Part 2: TMDL Accounting

- Tracking BMPs
- Accounting for pollutant load removed
- Lake Champlain BMP Accounting & Tracking Tool

Tracking Clean Water Activities

Clean Water Projects

- Planning, design, and implementation
- Project database and accounting tool

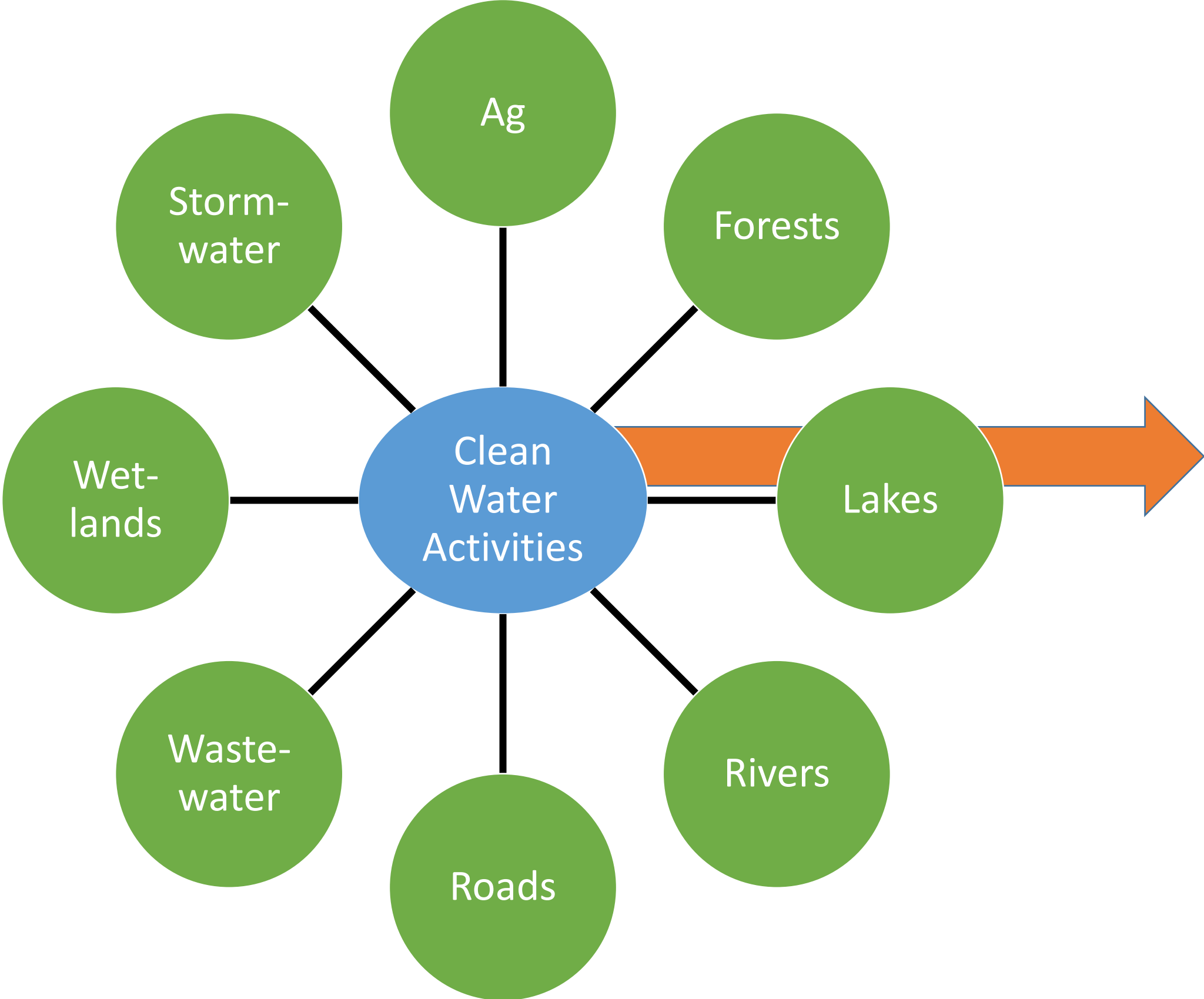
Outreach

- Workshops, Trainings, Meetings
- ANR online form

Technical Assistance

- Examples: Projects reviewed, site visits, meetings with landowners
- Summarized based on existing tracking mechanisms

Vermont Clean Water Act (Act 64)



Clean Water Investment & Performance Report

Social Measures

Investment Measures

Performance Measures

Environmental Measures

Lake Champlain TMDL Accountability Framework

DEC Tracking & Accounting

TBP Implementation tables identify priority actions to meet TMDL

Track implementation actions

Account for phosphorus load reduced

EPA Review

Issue interim and final report cards

Outreach Tracking

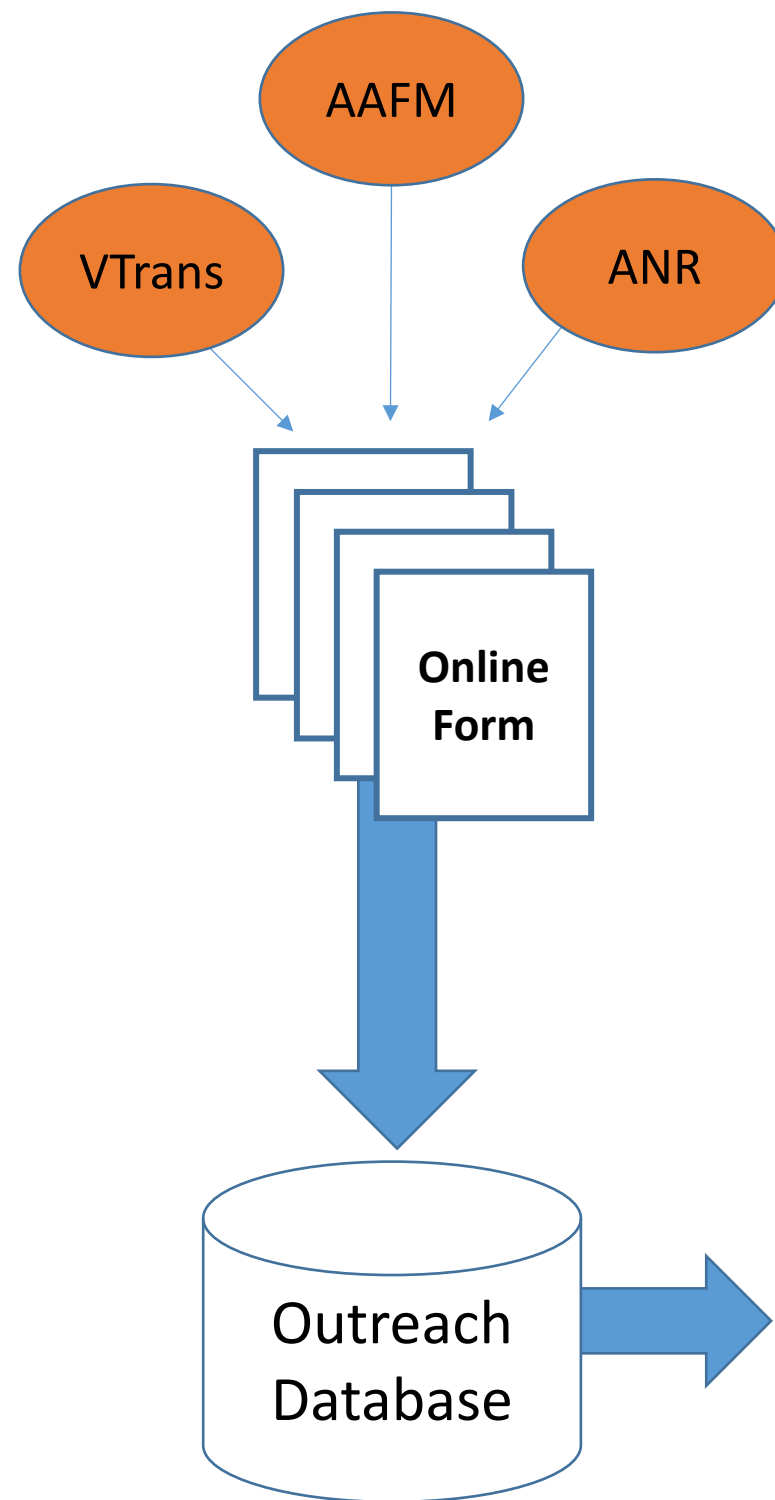
Reporting

Social Measures

Investment Measures

Performance Measures

Environmental Measures



Social Outcomes Report

SHORT TERM

Summary of Workshops, Training, & Public Meetings

- Number of attendees
- Number of events
- Hours provided
- Hours received by attendees

LONG TERM
Outreach efforts driving toward implementation

Clean Water Vermont Outreach Efforts

version 1.4

(Submission #: 2CW-PFR7-TM3T, revision 1)

Tracking Outreach Efforts

clear section

Event Identifiers

Event Subject *

Event Purpose

Event Date *

Event Location (Town) *

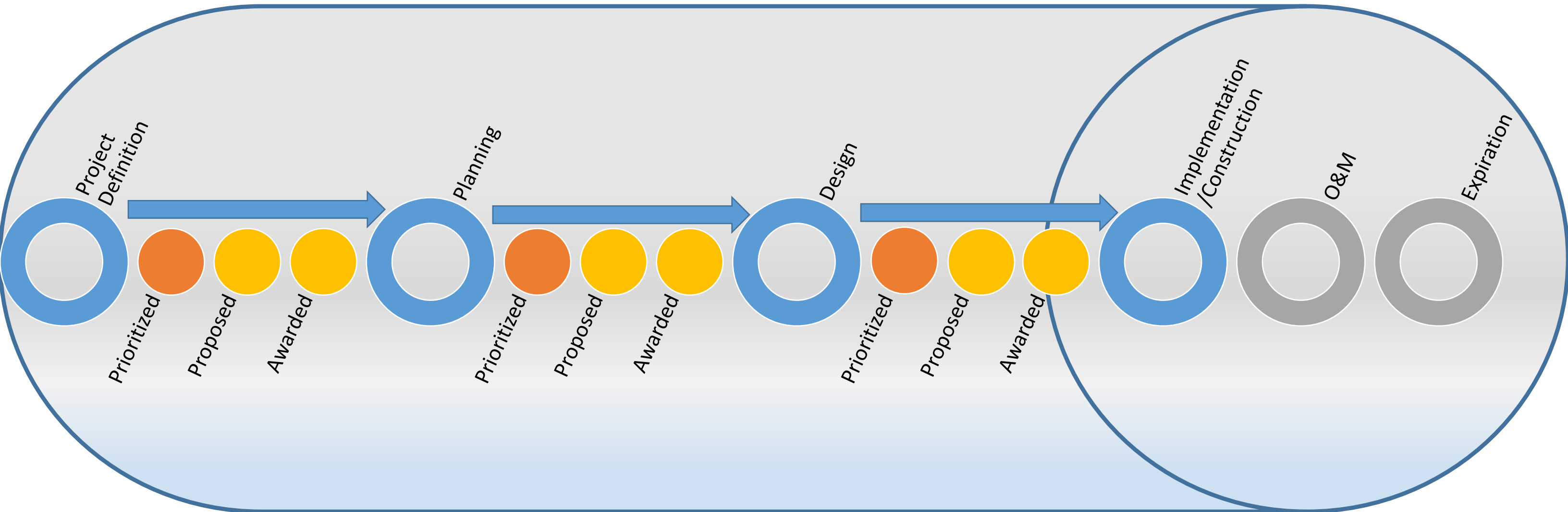
Event Location (County) *

Indicate geographic area targeted, if applicable (e.g., watershed, region)

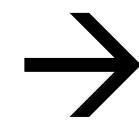
Event Organizer Affiliation *

Project Tracking

Pipeline of Projects in DEC Database

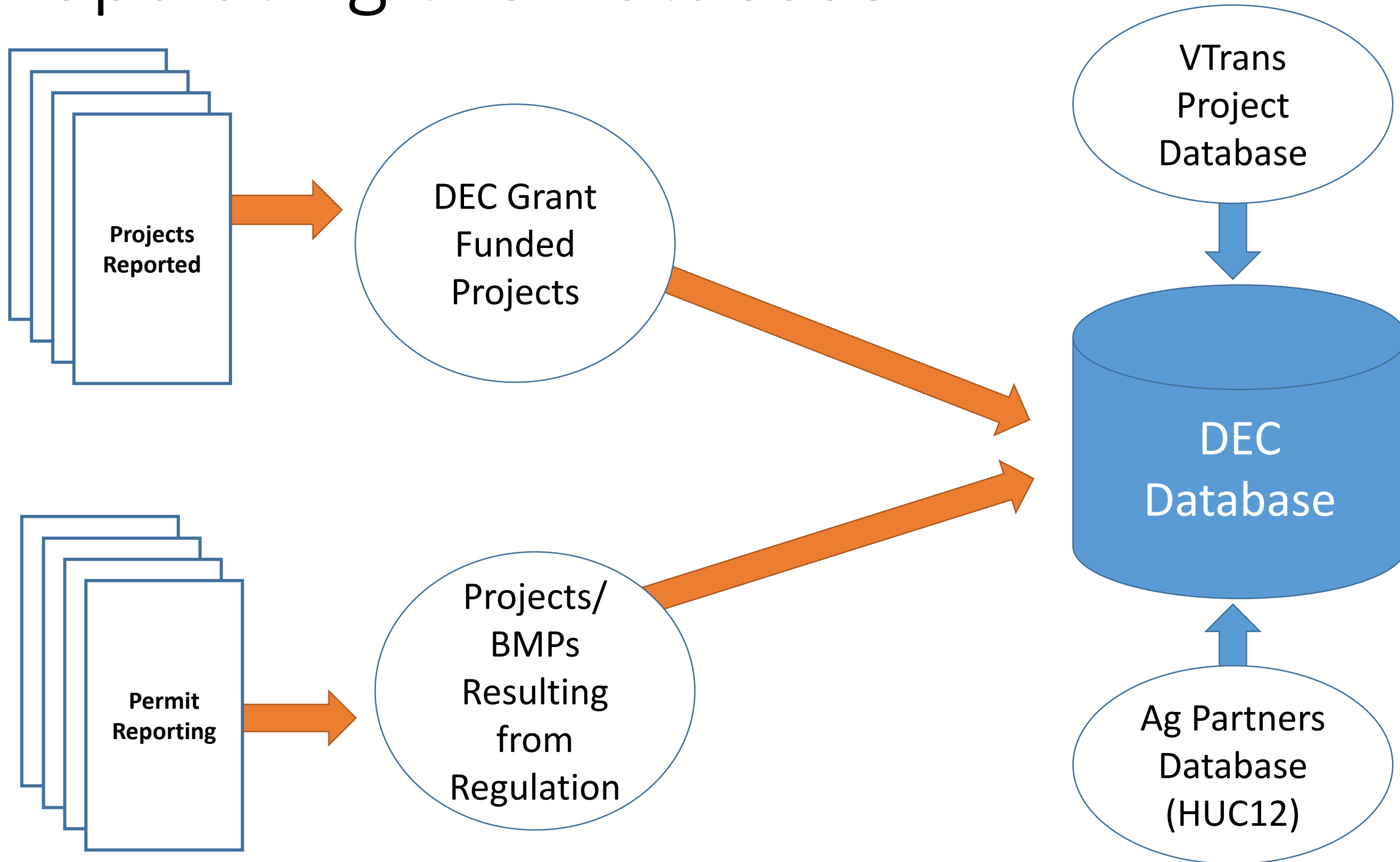


I.D. Tactical Basin Plan



Implementation

Populating the Database



WDP

Projects

Project Type:

Basin Plan:

Status:

- FY2015 and FY2016 funded projects included
- Basin planners adding projects for implementation tables

		ID	Project Name	Project Type	Status	Priority Points	Grant Number(s)
Edit	View	1	St. Johnsbury Stormwater Master Planning	Stormwater Master Planning	Funded		2016-ERP-1-02
Edit	View	2	Northfield Village Green Stormwater Site	Stormwater - Construction	Funded		FED
Edit	View	3	Stormwater and Phosphorus Reduction Master Planning and Priority Project Planning in Burlington	Stormwater Master Planning	Funded		FED
Edit	View	4	One Taylor Street	Stormwater - Construction	Funded		2016-ERP-2-11
Edit	View	5	Taylor Street Reconstruction Project	Stormwater - Construction	Funded		2016-ERP-2-12
Edit	View	6	Village at Dorset Park Stormwater Pond Improvements	Stormwater - Construction	Funded		FED
Edit	View	7	Towle Neighborhood Road - Planning and Design	Road Project Design	Funded		2016-ERP-1-22
Edit	View	8	Highgate Springs Shoreline Neighborhood Stormwater Project	Lake Shoreland - Design			
Edit	View	9	Hayes Road Sediment Control Project	Road Project Implementation	Funded		2016-ERP-2-03
Edit	View	10	Alburgh Stormwater Improvement Project	Stormwater - Design	Funded		2016-ERP-1-25
Edit	View	11	Preparing Local Watersheds for Flood Resilience and Reducing Runoff in Lewis Creek	Stormwater - Design	Funded		2016-ERP-1-24
Edit	View	12	Riparian Buffer Establishment - Whitney Brook and Black River	Riparian Planting - River	Funded		2016-ERP-2-02
Edit	View	13	Lake Bomoseen Stormwater Master Plan	Stormwater Master Planning	Funded		2016-ERP-1-01
Edit	View	14	Nesti Swale Phosphorus Pollution Mitigation Project	Stormwater - Construction	Funded		2016-ERP-2-01
Edit	View	15	Waitsfield Town Office Stormwater Mitigation	Stormwater - Construction	Funded		2016-ERP-2-09
Edit	View	16	Lamplite Acres Stormwater Retrofit				
Edit	View	17	Williston Town Fields Stormwater Treatment System	Stormwater - Construction	Funded		2016-ERP-1-26

WDP

Project ID 51
Project Name Northrop Road at Talcott Road (WB-3) Fairfield Ditch Project
Grant Number(s) 2015-ERP-2-12

Exit

- Project**
- Events
- Priority
- Measures
- BMPs

Project View

Project Name Northrop Road at Talcott Road (WB-3) Fairfield Ditch Project

Description Implement the Northrop Road at Talcott Road (WB-3) Fairfield Ditch Project, which will serve to remediate roadside erosion and ditch undercutting along a tributary of Black Creek.

Description The Grantee will address and remediate roadside erosion and ditch undercutting on a portion of Northrop Road west of Talcott Road where a ridge has formed between the road crown and the ditch which prevents runoff from leaving the road surface and entering the ditches as sheetflow. The excess water has formed a "secondary swale" in the roadway near the edge of the travel surface, leading to increased sediment transport and accelerated erosion. Sediment from the road surface is now clogging portions of the ditches near Talcott Rd.

Project Type Road Project Implementation

Source

Basin Plan

Stream Segment

Latitude 44.86411

Longitude -72.91528

Exit

Towns & Regions

Town
Fairfield

Basin/Sub Basins

Sub Basin
Black Creek

Stressors

Stressor
Land Erosion
Nutrient loading (non-erosion)

Partners

Partner	Status
Missisquoi River Basin Association	Funded

Project Search x Project Edit x

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Apps WSMD BMP Accounting ANR Online Doodle VTHR Social Indicators GCDMS WebEx Desktop publis...

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Project Events Priority Measures BMPs

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WDP

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Project **Events** Priority Measures BMPs

Events

Status: Finished

Date	Event	Funding Source	Amount	Grant Number	Notes
10/7/2014	Grant	Capital Grant FY2015	\$32,805.00	2015-ERP-2-12	
2/11/2015	Project Completed				

Project Search | Project Edit

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Project | Events | Priority | Measures | BMPs

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Partner
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Project Edit - Google Chrome

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WDP

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Grant Number(s) 2015-ERP-2-12

Project | Events | Priority | **Measures**

Measures

Event	Unit	Value	Status	Start Date	End Date
# of feet of drainage improved	feet	1342	A	2/11/2015	2/11/2025

Project Search x Project Edit x

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Apps WSMD BMP Accounting ANR Online Doodle VTNR Social Indicators GCDMS WebEx Desktop publis...

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Exit

Town	Sub Basin	Stressor	Partner
Fairfield	Black Creek	Land Erosion Nutrient loading (non-erosion)	Missisquoi River Basin Associ...

Project Search x Project Edit x

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Project **Events** **Priority** **Measures**

Measures

Event	Unit	Value	Status	Start Date	End Date
# of feet of drainage improved	feet	1342	A	2/11/2015	2/11/2025

- Adding BMPs and tracking information to allow pollutant load removal estimates
- Adding priority point system based on MAPP's stage gate criteria

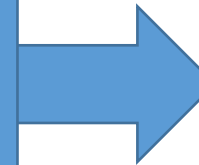
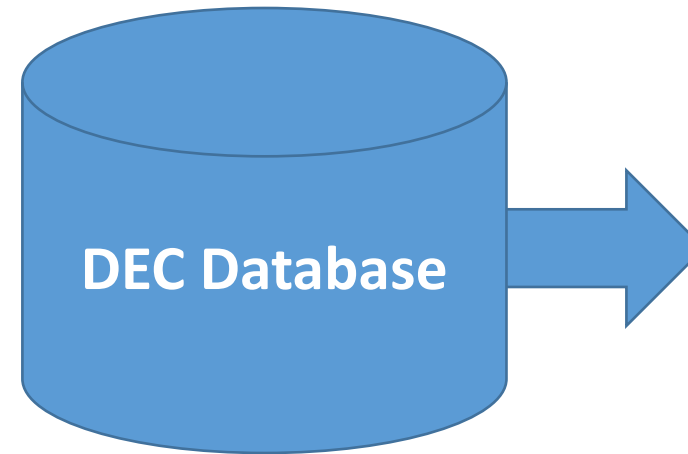
Reporting

Social
Measures

Investment
Measures

Performance
Measures

Environmental
Measures



Summary of \$ invested in projects

- By sector
- By watershed
- By county

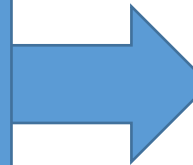
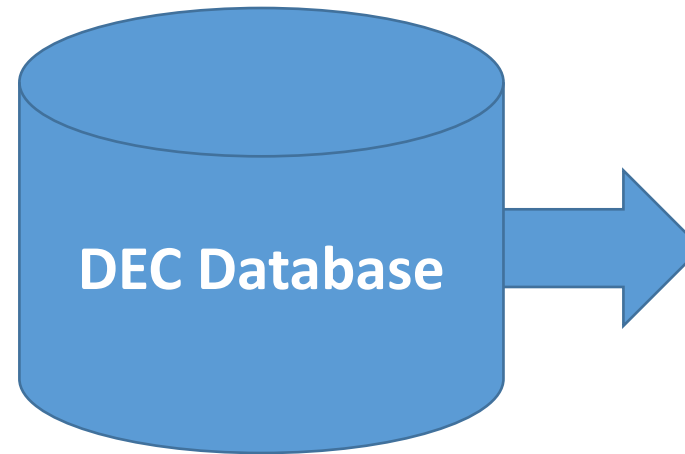
Reporting

Social Measures

Investment Measures

Performance Measures

Environmental Measures



Summary of Performance Measures (e.g., linear feet or acres)

- **By sector**
- **By project type**

Reporting

Social
Measures

Investment
Measures

Performance
Measures

Environmental
Measures
(TMDL)

Pollutant load removed from NPS, SW,
and WWTFs relative to TMDL targets:

1. Lake Champlain TMDL

2. Lake Memphremagog

3. Long Island Sound/CT River

Reporting

Social
Measures

Investment
Measures

Performance
Measures

Environmental
Measures
(TMDL)

Part 2: TMDL Accounting

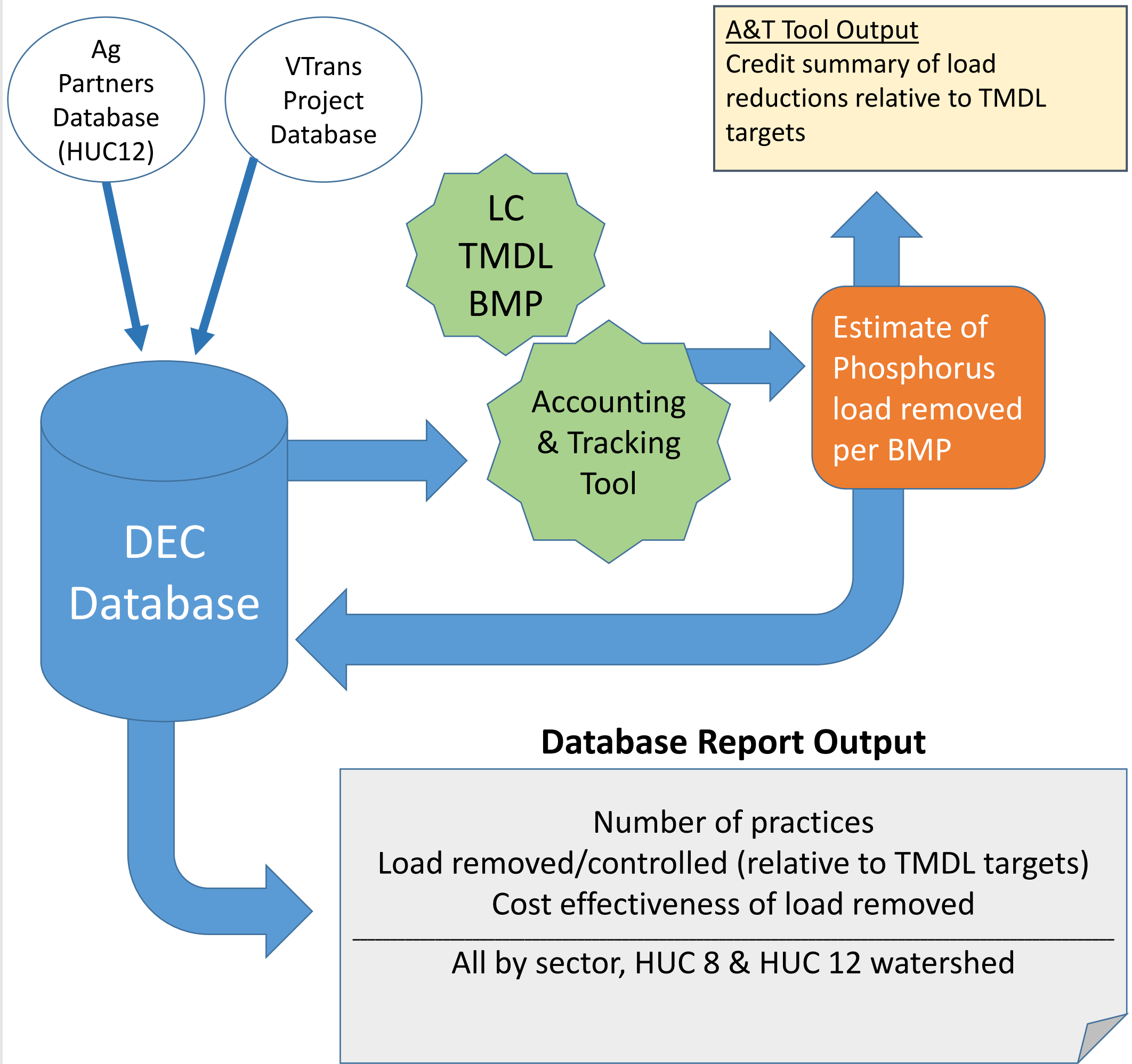
Tracking TMDL Implementation

DEC Database will track:

- Structural BMPs
- Non-structural BMPs
- Agricultural BMPs
- Land use conversions

Reporting

- Social Measures
- Investment Measures
- Performance Measures
- Environmental Measures (TMDL)



A&T Tool Output
Credit summary of load reductions relative to TMDL targets

LC TMDL BMP

Accounting & Tracking Tool

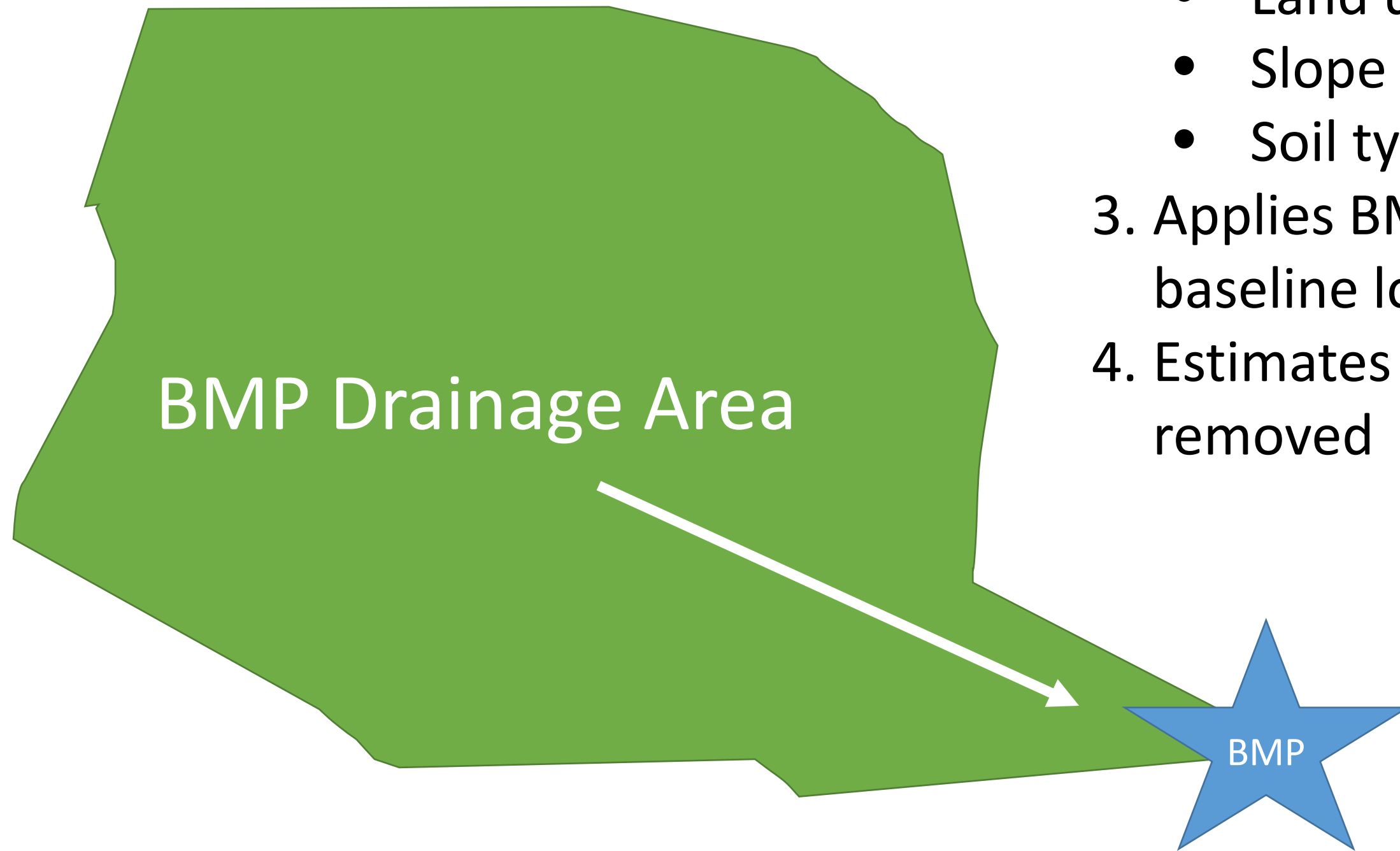
Estimate of Phosphorus load removed per BMP

Database Report Output

Number of practices
Load removed/controlled (relative to TMDL targets)
Cost effectiveness of load removed

All by sector, HUC 8 & HUC 12 watershed

Estimating Phosphorus Load Reductions



1. Build BMP drainage area
2. Estimates baseline load (SWAT)
 - Land use
 - Slope
 - Soil type
3. Applies BMP efficiency to baseline load
4. Estimates annual average load removed

BMP Efficiencies

- Tetra Tech performance curves for New England
- Vermont Stormwater Management Manual
- Chesapeake Bay Program BMP expert panel recommendations

Have flexibility to update with new & improved information

Next Steps (near → long term)

- Test LC BATT and link with DEC project database
- Develop template for collecting BMP data (potentially an online form)
- Collect input on BMP tracking & accounting process
- Consider BMP verification protocol and tracking O&M

Thank you!

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DEC Vermont Clean Water Initiative Program

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