

# Final Presentation

iSchool Consultancy Team  
PALS - MD-DNR



# Goals

---

- Enable internal CCS staff to better understand the distribution of their partner organizations using static visualizations and data analysis
- Empower internal CCS staff to easily and efficiently search for partner organizations within an interactive database, based on a set of search criteria





# Agenda

---

- Data Cleaning
- Deliverables
  - Tableau Interactive
  - Google Sheets - Static
- Platform Comparison
- Recommendations





**01**

**Data Cleaning**





# Data Cleaning



- The **CSS Contact Name** required some normalization for analysis. There are pairs of names in different orders. Some rows used slash separators, and some did not. All the pairs of names were put in the same order. A uniform method of separator was used. These steps had to be done before data analysis.
- **Organization** : Needed to split up each organization in order to give credit to each partner. With this, we utilized the *Community and Partners* dataset to aggregate and convert data into numerical form. Then aligned data into a suitable format for further aggregation. This made it possible to facilitate the identification of top-ranking engagement categories per county and gather the sum of each county's engagement category.





# Data Cleaning



- **Engagement Category:** Separated values in one engagement category column into distinct columns, facilitating easier search and filtering functionality
  - Example: “Climate, Grants/financial assistance” -> “Climate”, “Grants/financial assistance”
- **Geographical Coordinates**
  - Missing x , y coordinates
  - Cross - Referenced w/ County and filled in missing coordinates
  - Additional column made for add-in coordinates







# 02

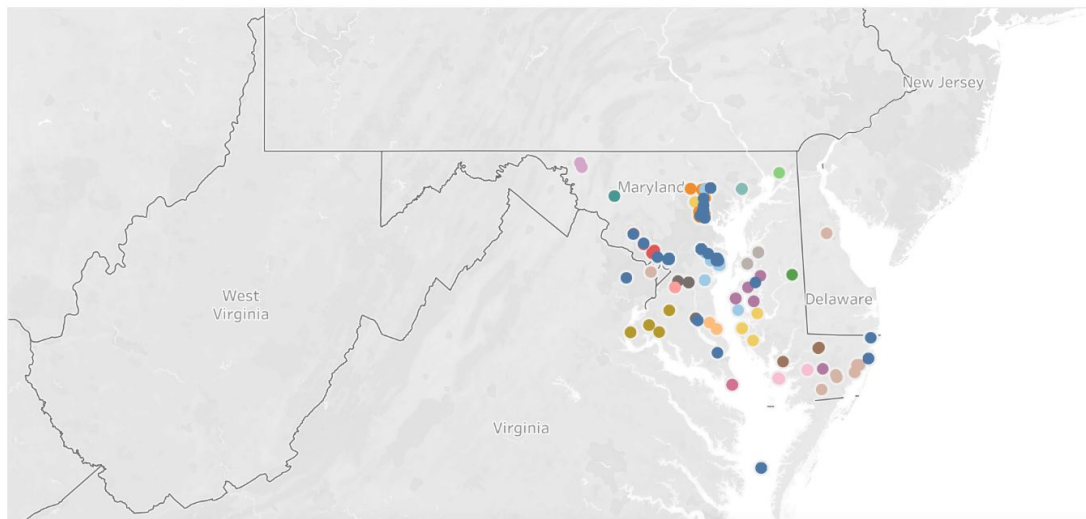
## Tableau Deliverables

Interactive Visualizations



# County Map

County Map

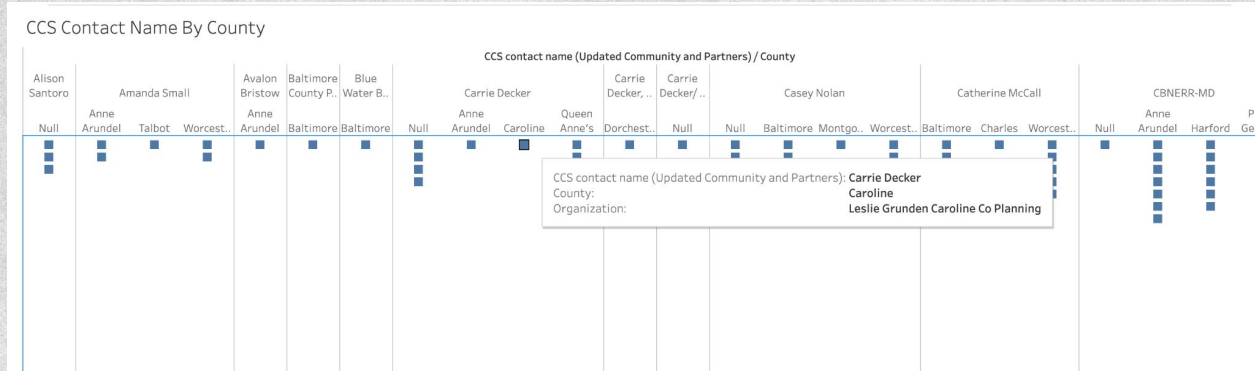


- County
- Null
  - Anne Arundel
  - Baltimore
  - Calvert
  - Caroline
  - Cecil
  - Charles
  - Dorchester
  - Frederick
  - Harford
  - Montgomery
  - Prince George
  - Prince George's
  - Queen Anne's
  - Saint Mary's
  - Somerset
  - Talbot
  - Washington
  - Wicomico
  - Worcester





# Contact Name Dashboard





# Filterable Dashboard

MD-DNR Partnerships		
Organization	Contact name	County
AA Co DPW	Isaac Wilding	
AA Co Rec & Parks	CBNER-MD	Anne Arundel
AA Co Watershed Restoration	Carrie Decker	Anne Arundel
Alliance for the Chesapeake	Dana Reiss	
Alliance for the Upper Chesapeake	CBNER-MD/Resiliency through Restoration	
APG	CBNER-MD	Harford
Army Corps of Engineers	Nicole Carlozo	Dorchester
Arundel Rivers Federation	CBNER-MD	Anne Arundel
	Nicole Carlozo	Anne Arundel
Assateague State Park	CBNER-MD/Resiliency through Restoration	
Atlantic States Marine Fisheries Commission	Amanda Small	Worcester
	Catherine McCall	Worcester
Audubon Nature Society	Monserrat Pizarro	
Baltimore City Public Schools	Jen Wolfe	Baltimore
Baltimore Co DEPR	Isaac Wilding	
Baltimore County DEP	Doug Rowland	Baltimore
Baltimore County Schools	Baltimore County Public Schools	Baltimore
Baltimore Tree Trust, other similar non-profits working	Dana Reiss	
Blue Water Baltimore	Blue Water Baltimore	Baltimore
	Dana Reiss	
BOEM	Catherine McCall	Worcester
Broadneck High School	CBNER-MD	Anne Arundel
Bruna ATtella	Kate Vogel	Baltimore
Caroline Co DPW	Isaac Wilding	
Catoctin Land Trust	Rachel Mark	Washington
CBEAC	CBNER-MD/Resiliency through Restoration	
	Nicole Carlozo	Queen Anne's
CBF	CBNER-MD	Anne Arundel
CBL	CBNER-MD/Resiliency through Restoration	
CBNER	Deal Island	Somerset
	Nicole Carlozo	Queen Anne's
CBP	CBNER-MD	Anne Arundel
CBP	Phillip Stafford	Baltimore
CCS Shoreline Erosion Control	Carrie Decker/ Dan Levan	
Cecil Co DPW	Sarah Hilderbrand	
Charles County Resilience Authority	Catherine McCall	Charles
	Christine E Conn	Charles
Chesapeake Bay Foundation	Jen Wolfe	Baltimore
Chesapeake Bay Program	Alicia Sathorn	

County
<input checked="" type="checkbox"/> (All)
<input checked="" type="checkbox"/> Anne Arundel
<input checked="" type="checkbox"/> Baltimore
<input checked="" type="checkbox"/> Calvert
<input checked="" type="checkbox"/> Caroline
<input checked="" type="checkbox"/> Cecil
<input checked="" type="checkbox"/> Charles
<input checked="" type="checkbox"/> Dorchester
<input checked="" type="checkbox"/> Frederick
<input checked="" type="checkbox"/> Harford
<input checked="" type="checkbox"/> Montgomery
<input checked="" type="checkbox"/> Prince George
<input checked="" type="checkbox"/> Queen Anne's
<input checked="" type="checkbox"/> Saint Mary's
<input checked="" type="checkbox"/> Somerset
<input checked="" type="checkbox"/> Talbot
<input checked="" type="checkbox"/> Washington
<input checked="" type="checkbox"/> Wicomico
<input checked="" type="checkbox"/> Worcester

<b>Chesapeake Bay Program</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>GIS and Mapping</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Climate</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Communications &amp; Outreach</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Community Engagement</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Dredging and BU</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Education</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Event/Volunteer Opportunities</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Flooding</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Grants/financial assistance</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Monitoring and Data Anal.</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Policy and Regulations</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Public Access</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Stewardship</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Technical Assistance &amp; Sit.</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True
<b>Waterways and Marinas</b>	<input checked="" type="radio"/> (All) <input type="radio"/> False <input type="radio"/> True







# Tableau Pricing

## Tableau Creator

**\$75 user/month | billed annually**

Includes Tableau Desktop and Tableau Prep Builder, enabling full back-end work and data cleaning

## Tableau Explorer

**\$42 user/month | billed annually**

Tableau Cloud license (with relatively limited functionality when compared to Tableau Desktop) enabling back-end work

## Tableau Viewer

**\$15 user/month | billed annually**

Tableau Cloud viewer license that enables viewership of and interaction with Tableau dashboards



# 02

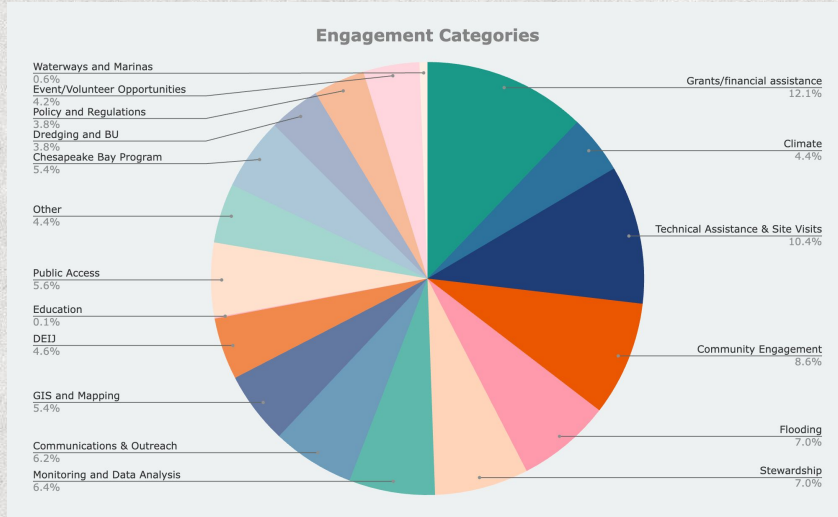
## Google Sheets Deliverables

Static Visualizations

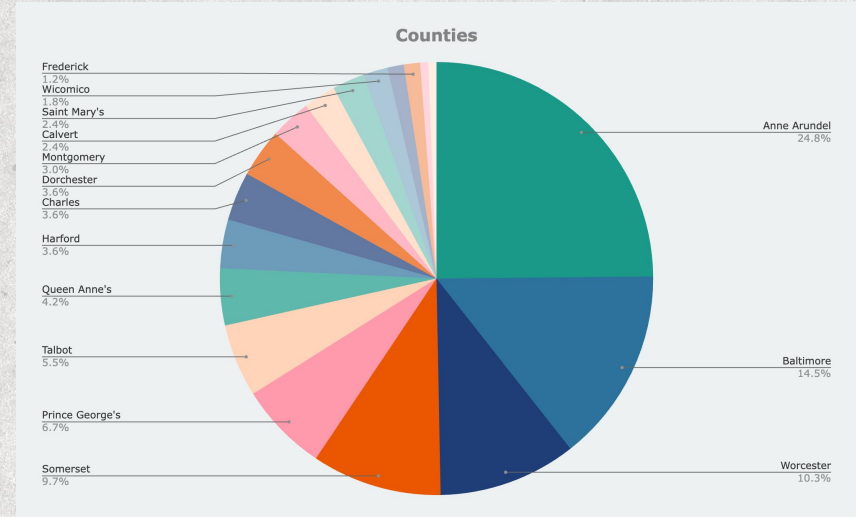


# Static Visualizations

## Engagement Categories



## Counties





# CCS Contacts

	A	B	C
96	<b>Total</b>		<b>105</b>
97	Anne Arundel	Amanda Small	2
98		Avalon Bristow	1
99		Carrie Decker	1
100		CBNERR-MD	7
101		Dylan Taillie	1
102		Elliott Campbell	4
103		Maggie Cavey	1
104		Mayor Gavin Buckley	1
105		MD iMap Technical Committee	1
106		Nicole Carlozo	5
107		NOAA - Maryland	1
108		Pat Gitlin	1
109		Rachel Marks	1
110		Sadie Drescher	1
111		Sarah Lane	9
112		Sasha Land	1
113		Shannon Sprague	2
114		UMCES	1
115	<b>Anne Arundel Total</b>		<b>41</b>
116	Baltimore	Baltimore County Public Schools	1
117		Blue Water Baltimore	1
118		Casey Nolan	4
119		Catherine McCall	3

By County

E	F	G
<b>Engagement Category</b>	<b>CCS contact name</b>	<b>Count</b>
Chesapeake Bay Program		
Chesapeake Bay Program	CBNERR-MD	20
	CBNERR-MD/Resiliency through Restoration	12
	Sarah Lane	7
	Phillip Stafford	4
	Jen Wolfe	3
	Alison Santoro	2
	Shannon Sprague	2
	Sasha Land/Nicole Carlozo	2
	Stephanie Tuckfield	1
	UMCES	1
	Olivia Wisner	1
	NOAA	1
	Laura Collard, Mary Westlund	1
	Elliott Campbell	1
	Claudia Donegan	1
	Catherine McCall	1
	Amanda Small	1
<b>Climate</b>		
	CBNERR-MD	20
	Nicole Carlozo	15
	Jackie Specht, The Nature	

By Engagement Category



# Highest Engagement Categories Per County

County	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
Worcester	Climate	GIS and Mapping	Waterways and Marinas	Technical Assistance & Site Visits; Community Engagement	
Wicomico	Climate				
Washington	Climate	Technical Assistance & Site Visits			
Talbot	Climate	Public Access			
Somerset	Education	Climate			
Saint Mary's	Climate				
Queen Anne's	Climate	Community Engagement			
Prince George's	Education	DEIJ	Climate		
Prince George	Education				
Montgomery	Climate	Grants/financial assistance	Monitoring and Data Analysis		
Harford	Education				
Frederick	Climate				
Dorchester	Climate	Education	Education	Flooding	Policy and Regulations
Charles	Education	Climate	Waterways and Marinas		
Cecil	Other				
Caroline	DEIJ				
Calvert	Climate				
Baltimore	Education	Climate	Chesapeake Bay Program	GIS and Mapping	Waterways and Marinas
Anne Arundel	Climate	Education	Chesapeake Bay Program	Community Engagement	Community Engagement
Other	DEIJ	Education	Climate	Waterways and Marinas	Technical Assistance & Site Visits



# 03

## Platform Comparison



# Platform Comparison

## Tableau

- Interactive visualizations are easy to make with the drag-drop features; user-friendly interface to create visualizations for large datasets
  - There are many options for data visualizations (bar charts, maps, scatter plots, etc.)
  - Features that allow you to customize dashboards based on the device it will be viewed on
- It does not require much back-end work as long as the data is clean and organized to match the current spreadsheet format

## Google Sheets

- Free and easily accessible to most staff
- Intended more for static, non-interactive visualizations; no easy filterability without use of formulas
  - Good for visualizations necessary for analysis (pie charts)
  - More difficult to update because of the application of formulas to cells within Google Sheets
- No easily usable geographical mapping option



# Updatability of Tableau

1. To Update/Edit, a Creator account is necessary
2. Three Options for Data Refresh
  - a. Live Connection
    - i. Connect to server (ex: Google Sheets)
    - ii. Demo
  - b. Extract
    - i. Saves subsets of datasets, that can be refreshed
    - ii. Helps with dealing with large data sets
  - c. Published Data Source
    - i. Do not recommend for the intents and purposes of this project, due to difficulty of managing the published data source and updating server





# Updatability of Google Sheets

1. Can be directly connected to surveys by using Google Forms, survey platform integration, or automation services like Zapier
2. Can create data visualizations by using “dynamic ranges” in formulas, facilitating updates to the visualizations as the range of values expands

Broadly, requires more knowledge and has a harder adjustment period than Tableau, which has a user-friendly drag-and-drop interface





**04**

**Recommendations**







# Recommendations

## Potential Gaps in Partnership Distribution

1. Partnering with more organizations working in the Waterways and Marinas, Policy and Regulations, and Dredging and BU engagement categories
2. Conducting more partnerships in Frederick, Wicomico, Saint Mary's, and Calvert counties

## Understanding Partnerships

1. Broadly reaching out to Nicole Carlozo, Dana Reiss, CBNERR-MD, and Jackie Specht, due to the fact they are most frequently listed as a CCS contact name for organizations
2. Using static data visualizations (Google Sheets) to determine the distribution of engagement category partnerships within counties
3. Using interactive data visualizations to search and filter for partnerships with specific criteria







# Future Directions

1. Developing a survey more suited towards matching the format of the cleaned data spreadsheets
  - a. Including more information on partner organizations (e.g., organization contact, length of partnership, scope of partnership)
  - b. Making necessary questions like geographic location mandatory
2. Incorporating organizations on grant-specific spreadsheets (DNR's Grant Gateway Program); including how their grants fulfill any of the four MD-DNR outcomes
  - a. Applying these outcomes to organizations from the *Community and Partners* dataset and identifying gaps in fulfillment
3. Using Tableau (or alternative tools like Python) to develop more comprehensive and cohesive interactive data visualizations





**Thank you!**

Questions?

