Texas Stream Team Water Dashboard and Watershed Filtration Eligibility

Streamline Spatial Solutions

Katie Harwood, Project Manager

Josiah Watson, GIS Analyst

Edie Jacques, GIS Analyst

Ceri Prior, GIS Analyst

Jared Olson, GIS Analyst

Client: Meadows Center for the Water and the Environment

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1. Abstract

This project focused on developing a dashboard for water quality site reporting for the Texas Stream Team at the Meadows Center for the Water and the Environment. This is intended to support staff in locating watersheds and sites where reporting needs to be addressed to increase reporting efforts. The current dashboard displays active sites within the map view as zooming in on selected area but lacks visualization of watershed reports are in without selecting it, along with not displaying the categories for filtering criteria that make a watershed eligible to be active. Tools such as ArcGIS Online, Suvery123, and ArcGIS Dashboards were utilized to build a system that allowed filtering of data, to meet requirements of at least three sites, 10 water quality records per site, and no report in the last 5 years. Automating and visualizing this data in a new dashboard permits streamlined identification of watersheds that need community scientists to help to collect more data.

Introduction

The Texas Stream Team is a volunteer-based environmental organization that monitors and reports water quality across the state of Texas. They have a public ESRI dashboard that is referenced by many researchers and resource managers. This dashboard currently visualizes all their collected water quality data for over 400 watersheds. The Meadows Center at Texas State University is currently implementing this tool for analysis and study purposes.

The issue that this dashboard currently faces is that it lacks a specific feature to visualize and select the eligible watersheds based upon specific reporting criteria. This project solved this by using Arcade expressions, within an ESRI dashboard, as well as utilizing both ArcGIS Pro and Online for data analysis purposes. Through automation, data verification, and visualization, this project's goal is to improve the current Texas Stream Team dashboard for Meadows Center staff use.

Problem Statement

The Meadows Center for Water and the Environment has tasked Streamline Spatial Solutions with implementing a tool to visualize and identify eligible watersheds in Texas inside of an ArcGIS dashboard. While the current Texas Stream Team dashboard does provide satisfactory visualization of water quality data across the state, it lacks the ability to effectively identify watersheds based on reporting criteria. These criteria consist of a minimum of three active monitoring sites, each with 10 samples per site, and having no formal report in 5 years.

The result of not having this tool makes staff manually evaluate the datasets required to determine the watershed eligibility, making for a time-consuming process and prone to inconsistencies. The implementation of automated filtering and visualization tools to prioritize certain watersheds supports effective decision-making processes. Bridging this gap improves staff workflow and enhances the overall functionality of the dashboard, program, and data analysis.

2. Data

The data employed within this project was a combination of data provided by our client, Laura Parchman with Texas Stream Team, publicly available spatial datasets to aid in the data query/filtration within our dashboard, and datasets created by our team in order to facilitate better web map visualization and arcade expression writing. The hydrologic unit code (HUC) 8 and 10 shapefiles were sourced from the Texas Parks and Wildlife data repository, and the Texas Counties shapefile was obtained from the U.S. Census Bureau and were noted to be largely complete and accurate. The data provided from the Texas Stream Team was intended to be utilized as a platform for our team to establish and implement the proper methodology for our web map, dashboard and arcade functions for the Meadows Center for Water and the Environment to replicate. As a result, the accuracy of the data provided was not as much of a concern compared to overall architecture and layout. The data was reprojected within ArcGIS Pro to WGS 1984 Web Mercator (Auxiliary Sphere) before being uploaded as feature layers within Arc Online.

2.1 Client and Created Data

Client provided data includes both a Texas Stream Team site status layer, and a water quality (WQ) monitoring layer. The site status layer, among other documentational and spatial attributes, records whether a given testing site is currently active or inactive, and the water quality monitoring layer compiles all the completed water monitoring samples for each testing site. To keep the site status and WQ sample layers separate within the project and web map, which was requested by the Texas Stream Team, a location reference table and point layer were to satisfy visualization needs. The location reference layer was also accompanied by two exported tables derived from a watershed report tracking table given by Laura Parchman that was used in arcade expressions as the datasets and reconfigured specifically for this project. Below, Table 1 shows all the layers used within the primary web map, and it is accompanied by Table 2 which shows all the tables utilized within the primary web map as well.

Table 1. ArcGIS Online Layers

Feature Name	Feature Type	Source	Purpose	Year	Notable Attributes
Watershed HUC10	Polygon	TPWD	Web map & arcade filtration	2026	Watershed Boundaries
Subbasin HUC8	Polygon	TPWD	Web map & arcade filtration	2026	Subbasin Boundaries
Texas River Basins	Polygon	TPWD	Web map visualization	2026	River Basin Boundaries
Texas Counties	Polygon	US Census Bureau	Web map visualization	2026	County Boundaries
Site Location	Point	Created	Web map visualization	2026	Site Coordinates
Site Status	Point	MCWE	Web map arcade filtration	2026	Current Active/Inactive Site Status
WQ Sample Data	Point	MCWE	Web map & arcade filtration	2026	WQ Testing Data for Each Site

Table 2. ArcGIS Online Tables

Table Name	Source	Purpose	Year	Notable Features
HUC08_Reports	MCWE	Enable arcade filtering expressions	2026	Report year and spatial info
HUC10_Reports	MCWE	Enable arcade filtering expressions	2026	Report year and spatial info
Site_Location_Table	Created	Serve as Location Reference	2026	Latitude and Longitude for each site

3. Methods

The goal of this project consisted of enabling the Texas Stream Team to easily parse and filter through their large water quality and site-by-site datasets using an internal ESRI Dashboard. The methodology focused largely on preparation of the provided and collected data and work was completed within ArcGIS Pro, ArcGIS Online Map Viewer, Dashboard creation, and Arcade expression writing. The overall task flow and methodology of the Watershed Data Filtration and Eligibility Dashboard project can be visualized with the flow chart in figure 1.

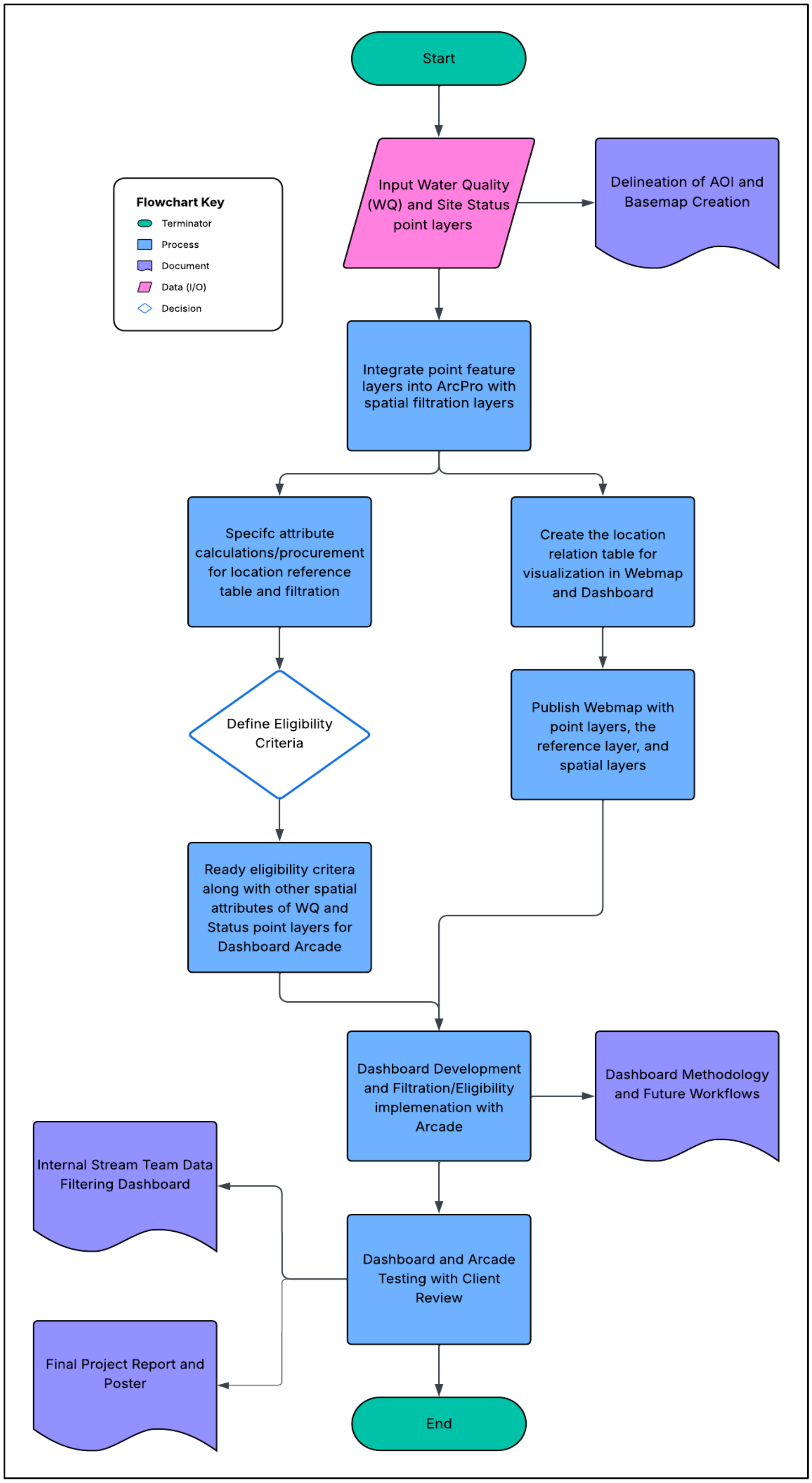

Figure 1. Data Flow Chart

3.1 Data Organization and Procurement in ArcGIS Pro

The initial stages of the project focused on aggregating all the data and preparing it for future use. The primary datasets provided by Texas Stream Team were a site status dataset, Survey 123 based water quality sample dataset, and a watershed report tracking table. These datasets, along with the gathered data consisting of subbasin and watershed, HUC-8 and HUC-10, river basin, and county shapefiles were all imported into an ArcGIS Pro project. After layers were projected and symbology was configured, data procurement within the map began to enable proper visualization for the web map. This included editing fields and attributes for future data query and eligibility criteria filtration to work properly.

Our client requested for the WQ sample and Site Status datasets remain exclusive without any direct attribute joins applied to them within the web map or dashboard to allow for them to still be individually updated on the back end as independent hosted feature layers. To achieve this, a new location reference point layer was made with exported site ID and coordinate attributes. Following this a relationship class was established between the new location reference, WQ sample, and Site-Status point layers respectively, each with a one-to-many join using a common site ID field. A visual of the relationship class properties can be seen within figure 2 below. With the relationship class established, pop-ups were configured for the location reference layer to enable the related layers to be seen and accessed within each site's pop-up in the web map.

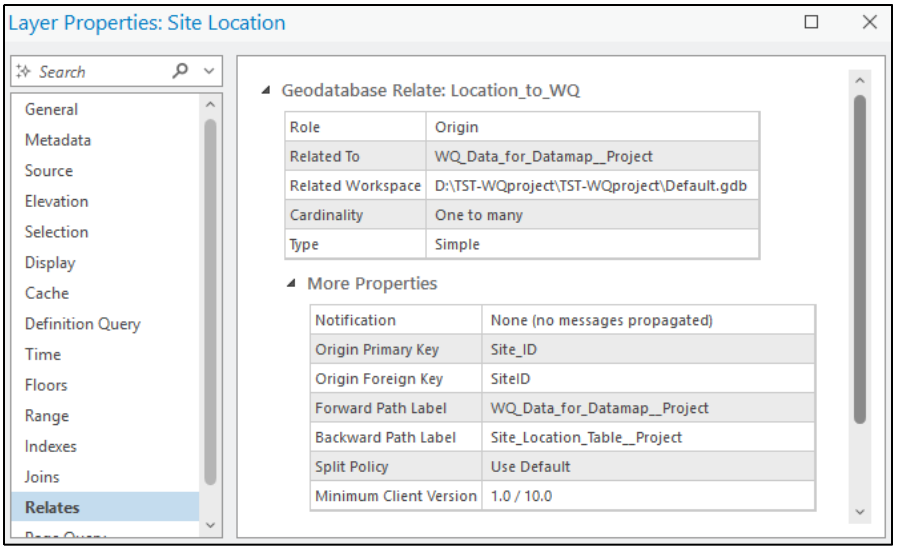

Figure 2. The relationship class properties established with the site location and WQ sample data layers

3.2 Web Map Publishing and Editing

Following the completion of data procurement, the ArcGIS Pro project was published as a web map for ArcOnline work processes. The initial work completed included tailoring the location point layer pop-ups, as seen in figure 3, to illustrate the active or inactive status of the selected site including the quantity and attributes water quality records that exist for the site. Additionally, a brief Arcade expression was written for the pop-up title to reference the site name field within the related site sample point feature layer instead of the site ID value, as shown in figure 4 below. During this phase, Streamline Spatial Solutions, concentrated their efforts on web map customization through clustered symbology to reduce visual clutter, fine tuning of the basemap, and labeling.

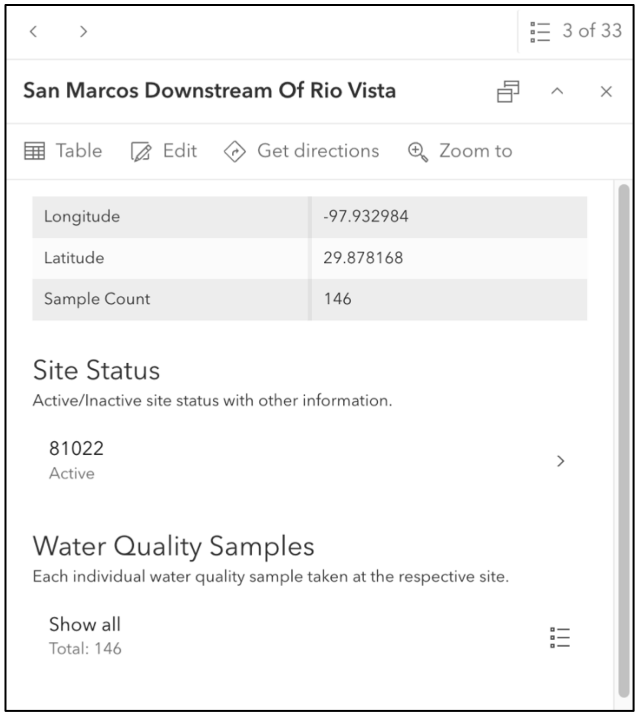

Figure 3. The pop-up for a location reference layer point showcasing the related site status and WQ sample layers

```
var rel = FeatureSetByRelationshipName($feature, "Sites_with_Sample_Te_Project")

if (Count(rel) == 0) {
    return null
}

var rec = First(rel)
return rec.Description
```

Figure 4. The arcade expression to call site names from the related site status layer for pop-up titles

3.3 Arcade Expressions and Scoring Methodology

To support watershed selection inside of the dashboard, we implemented Arcade expressions to achieve a weighted scoring method for each watershed. This methodology was selected for its flexibility, as it allows the user and developer to see which watersheds could be nearing eligibility soon or if a watershed needs to be flagged for further data collection. The scoring system was designed on a scale from 0 to 100, where higher scores indicate stronger eligibility. Each criterion is assigned a weight, and then the watershed goes through each of the three coding functions to determine how well it met the criteria. Our client requested a flexible scoring system; watersheds received a high score if the criterion was met or exceeded, a moderate score if the watershed was close to meeting it, and a low score if it was not met. The watershed would go through this process for each of the three criteria as shown in figure 5.

```
// site count scoring
if (siteCount >= 3) {
    score += 50;
} else if (siteCount >= 2){
    score += 20;
} else {
    score += 0;
}

//record count scoring
if (recordCount >= 10) {
    score+= 30
} else if (recordCount >= 7) {
    score+= 20
} else {
    score+= 0
}


//report year scoring
if(Year(Now) - reportYear >= 5) {
    score+= 20
} else if (Year(Now) - reportYear >= 4) {
    score+= 10
} else {
    score+= 0
}
```

Figure 5. The arcade expressions used to calculate weighted watershed eligibility scores for site count, record count, and reporting history

When determining weights for each criteria site count was identified as significant leading to it being weighed at 50%. Subsequently, water quality records are critical for data reporting, with it weighed at 30%. The remaining 20% was allocated to the reporting history criteria, which serves as a prioritization factor for identifying watersheds that have had no report recently.

Our Arcade functions allowed us to determine the needed inputs and optimize provided data for filtering tools. Necessary inputs included active site count, lowest amount of water quality records count, and the year of the latest report date all at the watershed level. Data included both inactive and active sites, stressing the importance of filtering out data to result in only including the active sites. A field of the lowest number of water quality records on a site allowed us to check if that number was under 10. With data having various different reports for the same watershed, it was essential that a field gave us the latest date opposed to a random date. A score field was generated to store the score number that each watershed received, shown in Figure 6.

score
80.00
80.00
70.00
70.00
70.00
50.00

Figure 6. Score field in the Final combined HUC layer

When developing Arcade expressions for filtering watersheds by the recency of their reporting history, our team restructured the watershed report tracker table provided by our client. This enabled us to filter through dates and ensure the data was being accurately visualized in our dashboard. We separated the contents inside the report tracking table by HUC-8 and HUC-10 based reports and further exported the data into independent tables to ensure we continued to maintain sufficient data organization. These two tables included critical fields such as basin name, counties stream segments, HUC-8/10 code, name, and report year. To further enable our needed spatial analysis, we integrated these tables into our primary web map. Performing an attribute join to their corresponding HUC-8/10 polygon layer through a one-to-many join. Using this method, it assured us that all reports within each watershed were being counted in our analysis and filters.

When determining the number of active monitoring sites within each watershed, we filtered the data to only include active sites. By doing this we ensured that our analysis accurately reflected reported data, avoiding inflated site numbers if inactive was included. This included performing spatial joins and having their relationships defined as intersects, which allowed us to guarantee that site reports that fell inside of the HUC boundary were being associated within the correct watershed. Next was configuring the join as a one-to-one operation and was configured to calculate count only. This produces a Join Count field, which is renamed in our data as Active Sites, as seen below in Figure 7.

Active Sites	Least Amount of Records
3	222
3	162
3	160
3	141
6	77

Figure 7. Attribute table showing the output of spatial joins, showing the number of active sites and lowest number of records per site in each HUC watershed

We found it necessary to obtain a field with records per site, to calculate the record count per watershed. An attribute join was performed between the WQ record table and site layer, which produced a field that contained this critical information. With this, we were able to create additional fields that displayed the lowest record count a site has in each watershed. Which ensured and streamlined our ability to check eligibility based on the criteria that no site could have less than 10 records.

The spatial relationship was set to intersect so that the record count would be associated with each respective HUC watershed. The join was configured as a one-to-one operation with field statistics applied, using Join_Count field to represent the number of records per site. The minimum field statistic was applied to get the minimum amount of records a site had per HUC watershed. (Figure 7)

QC_Flag	Flag Count
OK	0
OK	0
Missing DO, Missing Depth, Missing pH	3
OK	0
Missing pH	1
OK	0
OK	0
OK	0
OK	0
Missing DO, Missing Depth, Missing pH	3
OK	

Figure 8. Attribute table showing QC_Flag field and Flag Count field

To address our client's data inconsistency with site reporting and optimize their workflow, we implemented Quality Assurance/Quality Control (QA/QC) checks using Arcade expressions to automate identification of incomplete or inconsistent water quality records at the point level. We modeled our functions after their shared data validation document, to guarantee that we adhered to the system they follow within their office. As depicted in Figure 8, the QC_Flag field displays possible issues within reports, including missing sections where data didn't appear in reports. With Flag Count showing how many issues there are in total. These have been implemented to help our client see important areas where data is absent from water quality reporting.

Arcade functions were applied to implement checks to populate fields. Checks looked for missing, incorrect values, or information to ensure that inconsistencies and absent data was addressed and reported on. Our code as reflected in Figure 9, checked for empty fields and returning missing ones with missing, incorrect or invalid data.

A screening method was utilized to check if the value is between two thresholds, and if the data is an impossible or invalid value, it will be flagged for correction. This was designed to be forgiving to ensure that real values are not flagged. Additionally, this function finds samples that have the depth of zero and flags it for review since there are special use cases for if the value is zero. These functions output two new fields in the water quality table as a count for the amount of possible issues a sample has as well as the actual description of what the function is flagging. After the fields had been properly populated, a final attribute join with the new HUC layer to implement a field that shows the amount of flags in each watershed, so that users can see how many possible errors each watershed had.

```
// Dissolved Oxygen checks
if (IsEmpty(doVal)) {
    if (issues != "") {
        issues += ", ";
    }
    issues += "Missing DO";
    count += 1;
}
else if (doVal < DO_MIN || doVal > DO_MAX) {
    if (issues != "") {
        issues += ", ";
    }
    issues += "DO Out of Range";
    count += 1;
}

// Sample Depth checks
if (IsEmpty(sampleDepth)) {
    if (issues != "") {
        issues += ", ";
    }
    issues += "Missing Depth";
    count += 1;
}
```

```
// Zero depth review
if (!IsEmpty(sampleDepth) && sampleDepth == 0) {
    if (issues != "") {
        issues += ", ";
    }
    issues += "Zero Depth Review";
    count += 1;
}

// County check
if (IsEmpty(county)) {
    if (issues != "") {
        issues += ", ";
    }
    issues += "Missing County";
    count += 1;
}

// pH check
if (IsEmpty(pHVal)) {
    if (issues != "") {
        issues += ", ";
    }
    issues += "Missing pH";
    count += 1;
}
```

Figure 9. Arcade expressions used to identify missing or incorrect data in the water quality table. Includes dissolved oxygen, sample depth, county, and pH checks.

3.4 Dashboard Formatting

The dashboard includes filters located on the left sidebar created as category selector elements with drop-down menus that allow for selection of watersheds that coincide with their specific filter. These filters are set up with our created web map and filter through specific fields to allow the user to look at specific watersheds associated with the filter. The web map shown in the dashboard shows points for the water test sites and polygons for the watersheds; the points are aggregated into each other and upon zooming these points return to their original positions, as displayed in Figure 10.

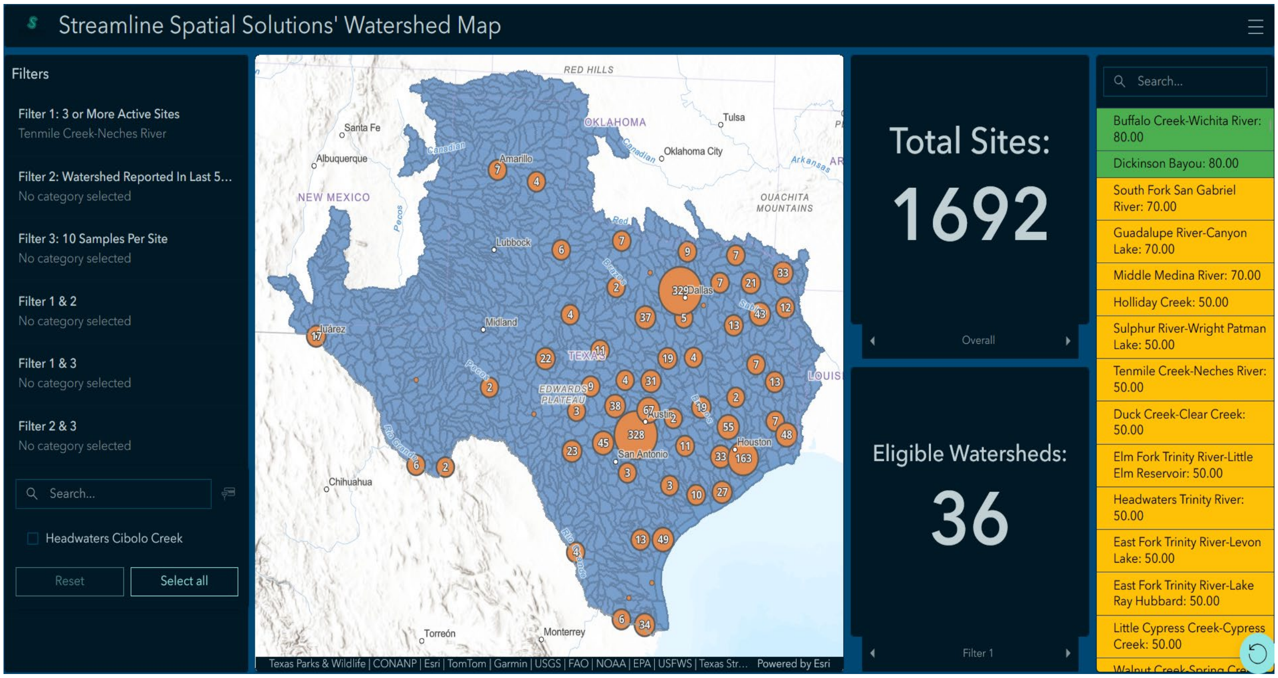

Figure 10. Dashboard showcase of the filters, web map, summary statistics, and scoring system

The dashboard displays summary statistics with tabs showing the count of total, active, and inactive sites. Along with total eligible watersheds which are based on separate filters and specific combinations of the filters. A list format allowed us to highlight all the watersheds and their respective scores based on criteria explained previously, as seen in Figure 10. We included a simple color code to help represent the watersheds standing within the custom scoring system. The scoring system allows for user interaction, enabling them to zoom into the watershed selected from the list, as an interactive element that permits active user engagement with our dashboard for a complete understanding of the project.

4. Results and Discussion

4.1 Results

This project developed a water quality and watershed filtration dashboard for The Meadows Center for the Water and the Environment. This dashboard was successfully developed using Survey 123, ArcGIS Pro, Arc Online, and Arcade expressions. It inputs water quality data collected by the Texas Stream Team into it and allows filters to be applied to meet specific criteria. Within this project for watersheds to be active, they had to meet requirements of at least three sites, 10 water quality records per site, and no report in the last 5 years. Filters allow the user to see eligible active watersheds, along with the status of ineligible ones and how close they are to becoming active. With this tool implemented, our client will have an improved workflow, and increased efficiency when delegating resources and tasks related to water quality data and retrieving additional data as time continues.

4.2 Data Quality Issues

Periodic issues with data quality were encountered during this project the data quality issues that we encountered were swiftly in the grand scheme of the project. This is largely because the data provided from our client was meant to serve as a tool or platform to enable the creation of the expressions used in the eligibility criteria and query dashboard system in which the content and validity were not as important as the data structure/layout. Despite this, there was still some confusion found in the labeling of NULL and N/A values in the water quality sample attributes due to the layer being derived from Survey123, but these values were able to be treated functionally the same within the arcade expressions using this feature layer.

Where existing data quality issues played a larger role within the project was with the supplementary arcade expressions meant to perform automated-QA assistance for missing values in different fields. Showcased within Figures 8 and 9 of the methods section of the paper, the expressions leverage the present data quality issues and identifies missing or incorrectly formatted attribute values within the water quality sample dataset and then raises an error flag for each respective attribute along with a total count of flags raised.

4.3 Concerns, Problems, and Limitations

Throughout the project, we encountered learning new tools and workflows when interacting with ArcGIS software. Multiple parts of this project included performing joins across data sets, where we had to ensure that the relationships between them were correct. To have it function and create a join for us to continue to use going forward for further needed operations, and our intended output. Within Arcade we encountered issues with calculating fields and implementing our expressions into the dashboard. For some of our members, they needed to create a new field within a certain layer, but upon trying to calculate the new field, there was no option for calculating the data table. We were able to work around it by creating a copy of the layer with the new field. One major issue we faced was that Arcade didn't allow expressions to be created within the calculated field option. When functioning correctly Arcade expressions work with calculating fields, but in certain cases in this project, it did not. This issue was especially prevalent in the creation of the filter showing watersheds with 10 samples per site. A field was trying to be created that returned a true or false value, but due to this issue we had to work around it and instead opt for using two values from separate layers and comparing them in the filter SQL expression.

One problem that arose during the development of the dashboard was trying to have the filters stack on top of one another. The filters were originally going to work with the user being able to select different combinations of the first three listed in the side bar. However, with how the category selector works it would allow us to select by each watershed and not by if we wanted a certain filter on or off. To work around this problem multiple filters were set up with the original 3 filters in different combinations. Due to only having three filters this fix was able to work, but if more filters were added this method would prove to be problematic as the number of combinations would expand.

The final problem our group encountered as a team was multiple issues with Microsoft and ArcGIS online saving on our computers. Saving and formatting between online and desktop apps, was not consistent. This could be overcome in the future by ensuring the same process for everyone and saving our information in different places, trying alternative Wi-Fi as well.

For future teams continuing this project, we would suggest performing additional spatial analysis for more in-depth reporting analysis. Implement a more in-depth grading, alert, and search system within the dashboard that highlights watersheds & sites almost meeting criteria. With this we would stress including contact information for Community Scientists closest to the sites and areas that need reporting. For our client to contact them and request additional reporting.

5. Conclusion

Our group successfully designed, developed, and validated a GIS workflow through an ArcGIS Online Dashboard. Which allowed for an improved data search system for the Texas Stream Team, to find and address watershed water quality reporting. This system worked as intended, showing how dashboards can present environmental data effectively to address resource allocation. This experience allowed us to overcome workplace GIS challenges and further strengthen skills in communication and foster a positive work environment.

This project will continue to support the Meadows Center for the Water and the Environment and the Texas Stream Team goals in ensuring sustainable water management and projecting water sources around the state. By developing this dashboard and filtering system we have allowed for a more accurate decision-making process, by highlighting where focus is most needed to be addressed by staff. This project further empowers those to use GIS to increase efficiency when dealing with sensitive data such as water quality, where accurate information on reporting is highly important.

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Appendix I: Group Members Contribution

Katie Harwood

I served as the project manager with the primary role of keeping track of assignments, progress, and general team guidance. Laying the framework for assignments, reports, and internal to do and progress lists. As well as checking everyone's work for presentations to ensure that formatting and style of the presentation/papers were cohesive. This contributed to developing a collaborative atmosphere for teamwork this semester, allowing for balanced and joint effort unity among all members. Which allowed for openness when running into problems based on members different strengths and issues that were encountered with the data and software's used throughout the project. Throughout the semester, I maintained contact with our client and arranged meetings, along with outside ones for our group to complete needed work. I contributed to the research of the methodology for our web map and Arcade code for the dashboard. As well as contributing to all stages of data preparation, which included performing different joins and creating different layers to display the data by site location, the HUC and basins Watersheds were in, in addition to further data joins and preparation to be implemented into the Arcade code. Across all reports I completed the timelines for the group to follow to adequate time was dedicated to each phase and ensured we moved smoothly to each preceding phase. Within this final report I developed the abstract, results, concerns and limitations, and the conclusion. On all three reports, I completed in depth editing of every section, rewriting when needed to meet requirements. This was done extensively on this final report to ensure our work was represented accurately. Completed work on presentation for introduction, results and discussions, limitations and issues. On the poster I contributed to the results section, organization of writing, and editing of work and writing within it.

Josiah Watson

I have worked as a GIS Analyst with a workload focused on the initial data procurement and organization within ArcGIS Pro along with web map and visualization editing within ArcOnline. I aided the rest of the team in the initial phases of parsing through and familiarizing ourselves with the data provided by our client along with research efforts specifically for web map layer visualization as well as possible dashboard arcade implementations working towards our deliverable goals. I contributed to the proposal phases with making the scope basemap for our project as well as handling the ArcGIS Pro project for standardizing our data along with the tasks of creating the location reference point layer, establishing the relationship class to the site status and WQ point layers, and configuring pop-up attributes for the layers before publishing the project and the feature layers to ArcOnline. I also worked on the primary web map with overall symbology and pop-up customization to create a user-friendly interface on a site-point by site-point basis through custom arcade labeling and clear access to the related datasets for the location reference layer. Lastly, along with divided work on the document and presentation/poster deliverables, I aided with small tasks as needed to prepare various datasets for the dashboard arcade expressions and compiled and attributed needed metadata for the project and report.

Edie Jacques

I worked as a GIS Analyst on this project and contributed to several phases in initial research, data preparation, web map development, and the final project deliverables. My work started with completing initial research on Arcade, dashboard, and references. My work then consisted of assisting with the different data joins and attribute preparation to support the functionality of the final dashboard. I contributed to assisting with the formulation and refinement of the web map, including the help of organizing and visualizing the spatial data. In addition to my GIS specific contributions, I also produced the format of the final project poster, assisted in preparing the presentation materials, and made sure everything was professionally formatted. I also supported the project manager in keeping the group on track by assisting in coordination and helping to maintain the momentum in the project phases.

Ceri Prior

I worked as a GIS Analyst on this project and primarily focused on developing the Arcade coding logic behind our dashboard. I also assisted with data preparation and integration, spatial analysis and joins, documentation, and even an extra added QA/QC implementation for our client. I prepped and structured our data by filtering needed site information and determined the needed input fields required for the future coding functions, which included an active site count, a minimum site record count, and the reporting year at the HUC watershed level. I performed spatial joins and analysis by joining HUC layers with site status and location layers, and with the water quality table using different spatial operations intersecting with each respective HUC layer to get the count fields that were needed. I then joined everything into one HUC layer and renamed the fields for organization and clarity. I developed a weighted scoring system to evaluate watershed eligibility, with a scale of 0-100, and assigned weights to each criteria based on what our client deemed the most important. I also implemented conditional logic to assign a high score for each criteria that met or exceeded the threshold, a moderate score for criteria that was almost met or was just under, and a low score for criteria that was not met. Finally, I implemented automated QA/QC checks for our client by adding the fields QC_Flag, text description of flagged issues, and Flag count, the count of the number of flagged issues per record in the water quality table. To calculate this, I implemented Arcade coding functions that checked for missing data, out of range data, and unrealistic numbers. This was based on the water quality data validation document that was given to us by our client. I then joined that to our final HUC layer to display the number of flagged issues per HUC watershed.

Jared Olson

I worked as a GIS Analyst and primarily worked on developing the dashboard and creating some of the arcade expressions for the product. I completed research on how to work with ArcGIS Dashboard and Arcade to help ensure that the process was as easy as possible. The general layout and set up of the dashboard were produced, making sure that elements were connected to correct web maps, layers, and fields to properly represent the data. I helped create and edit layers in ArcGIS Online to ensure that the filters, summary statistics, and scoring system worked correctly in the dashboard. Support was also provided in the reports and presentations mainly in the form of corrections and writing parts about the dashboard and its functionalities.

Appendix II: Metadata

Table 3. Metadata file descriptions

Filename	Metadata Description
HUC08_Reports_metadata.html	The exported HUC-8 subset within the watershed report tracker table.
HUC10_Reports_metadata.html	The exported HUC-10 subset within the watershed report tracker table.
Site_Location_metadata.html	The point layer that serves as the locational reference for the client provided datasets.
Site_Location_Table_metadata.html	The table for the site location reference point layer.
Site_Status_metadata.html	This is the site-by-site status point layer delivered from Texas Stream Team.
Subbasin_HUC-8_metadata.html	The HUC8 polygon shapefile showing the Texas subbasin regions.
Texas_Counties_metadata.html	The Texas Counties polygon shapefile.
Texas_River_Basins_metadata.html	The Texas river basins polygon shapefile.
Watershed_HUC-10_metadata.html	The HUC10 polygon shapefile showing the Texas Watershed regions.
WQ_Sample_Data_metadata.html	This is the water quality sample point layer delivered from Texas Stream Team.
Flag_Count_metadata.html	Quantifies the number of data quality issues identified in each water quality record.
QC_Flag_metadata.html	Identifies and flags potential data quality issues within water quality sampling records.
Scoring_Eligibility_metadata.html	Calculates a weighted score to determine site eligibility based on data availability and recency.

Appendix II (a): AI Usage Statement in Metadata Creation

ChatGPT was used in the creation and formatting of the metadata for the three primary Arcade expression used within the eligibility scores and weighted scoring system along with the supplementary data quality flagging expressions. A template of an ArcCatalog metadata editor html file was imported into ChatGPT along with a prompt including a provided summary, description, credits, and the arcade version used for each expression to output a formatted html metadata file for the expression inputs.

Appendix III: Additional Contacts and Resources for Information Collection

For further information, contact

Katie Harwood (Project Manager)

Texas State University

Department of Geography and Environmental Studies

601 University Drive

San Marcos, TX 78666

Phone: 512-745-7994

Email: Harwoodmkatherine@gmail.com

Josiah Watson (GIS Analyst)

Texas State University

Department of Geography and Environmental Studies

601 University Drive

San Marcos, TX 78666

Phone: 713-205-6839

Email: jbowayson@gmail.com

Edie Jacques (GIS Analyst)

Texas State University

Department of Geography and Environmental Studies

601 University Drive

San Marcos, TX 78666

Phone: (254)-624-7370

Email: ellenjacques05@gmail.com

Ceri Prior (GIS Analyst)

Texas State University

Department of Geography and Environmental Studies

601 University Drive

San Marcos, TX 78666

Phone: (512)-962-7370

Email: ceriprior@gmail.com

Jared Olson (GIS Analyst)

Texas State University

Department of Geography and Environmental Studies

601 University Drive

San Marcos, TX 78666

Phone: (832)-586-6416

Email: jolson142000@gmail.com