GIS Day Excellence Awards 2017

GIS Day Excellence Awards 2017

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Chief Technology Officer, Director,
Department of Information Technology

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Tom Conry
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2016
GIS
Excellence
Awards
Ceremony

Foreword

The use of GIS technologies in the County has led to the work you see honored here at the GIS Excellence Awards and posted in the Awards Gallery.

As part of the GIS Day celebrations, the GIS Excellence Awards are given annually for outstanding uses of GIS technology by Fairfax County employees and agencies. The awards were created to recognize and celebrate those County employees and agencies that are effectively and innovatively using GIS technology. This year, 33 submissions were received for the six categories of recognition.

As with previous years, a judging panel from outside Fairfax County Government donated many hours of their time evaluating the entries. This year, judges were from Northern Virginia Community College and Prince William County's Geographic Information Systems Division.

The awards have three categories recognizing individual and/or team accomplishments and three categories recognizing agency accomplishments. The following page lists the categories and their descriptions.

GIS Day Excellence Awards 2017

Awards Category Descriptions

Individual/Team Categories

First, Second and Third Place Awards for Each Category

Best GIS Cartographic Product/Presentation
This award is intended to showcase the power of GIS tools in creating accurate, instructive, and visually-pleasing maps. Criteria used to evaluate the entries include:

- clarity of purpose and intent
- the use of GIS tools, methods, and operations to go beyond basic cartography
- visual balance and appeal
- inclusion of necessary map elements and conventions
- quality control for typos or other errors

Best Use of GIS for Analysis
This award is intended to showcase the power of GIS tools in undertaking sophisticated spatial analyses that aid County operations and answer significant questions. Criteria used to evaluate the entries include:

- complexity of analysis; use of tools, scripting, model-builder, etc.
- ingenuity/creativity/originality of GIS methods used
- project benefits to a team or department
- effective demonstration of the information and insight gained (e.g., diagrams, maps, presentations, report, text)

Best Web Application
This award is intended to showcase the ever-increasing presence of GIS web applications. Whether on the intranet or internet, these applications are a significant foundation for bringing maps, geospatial data, and tools to a varied audience of County staff and residents. Criteria used to evaluate the entries include:

- effectiveness of the web application in meeting stated purpose
- benefit to the public and/or agency
- incorporation of application into business practices
- aesthetics and ease of use
- use of well thought-out cartography
- inclusion of innovative and unique tools

Agency Categories

Awards Presented to Agencies

Most Significant Data Contributor
This award is presented to the agency that has created or refined the most significant spatial data for the County. Criteria used to evaluate the entries include:

- significance of the data for the county and/or agency
- importance to agency's long-term business processes
- level of effort required to create/maintain the data
- sophistication of process to create/maintain the data

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Best Use of GIS for Public Outreach
This award is presented to the agency that best utilizes GIS to Serve the Public with map doscuments, customer service operations, press relations, or public events. Criteria used to evaluate the entries include:

- effectiveness of the GIS work to the ourteach effort
- degree to which a difficult message was clearly communicated
- complexity of cartography, data analysis, customization and/or programming
- adapatability to future expansion/modification
- contribution of GIS as a planning tool for the outreach effort

Best GIS Integration (two awards)
This award is presented to the agency that has integrated GIS into their operations to the greatest degree. Agencies
that have a long history of GIS, as well as agencies that are in the beginning stages of GIS integration, will be
evaluated separately. Criteria used to evaluate the entries include:

- effectiveness of the integration in meeting its stated goal
- increased use of GIS in the agency, either directly or through agency-generated GIS products
- increased agency efficiency as a result of GIS
- demonstration of significant effort to train staff in GIS
- ingenuity/creativity/originality of GIS methods utilized
- ability to gain insights into data/project/issue as a result of the integration
- potential for further GIS-related growth

Excellence Award Entries

(alphabetically by title)

Absentee Wait Time App - Panagakos, George; Electoral Board
Battalion 403 - Keg Good; FRD
Central Business Areas Report for General Service Administration - Harry Rado; DPZ
Citizen Scientist Floatable Monitoring Program - Brett Martin; DPWES Business Support Services
Comprehensive Site-Specific Plan Amendment Process Web Map Application - Dan White; DPZ
Creating Data Driven Mapping Applications to Facilitate Economic Success in Fairfax County - Joseph Bui; County Executive's Office
Dead Run Story - Brett Martin; DPWES Business Support Services
Differential LiDAR Analysis of Stream Erosion and Restoration Areas - Brett Martin; DPWES Business Support Services
District Reference Map - Chip Galloway; DPWES Business Support Services
Embark Richmond Highway Viewshed Analysis - Gayle Hooper; FCPA
Embark Richmond Highway Affordable Housing Near Potential Bus Rapid Transit Stations - Abdirazak Hamud; HCD
Fairfax Connector Latent Demand Analysis - Hejun Kang; DOT
Fairfax County Communitywide Housing Strategic Plan - Navneet Sohi; HCD
Fairfax County Communitywide Strategic Plan Survey Results - Navneet Sohi; HCD
Fairfax County Fire and Rescue Department: GIS Expansion Pilot - Steve Dennis; FRD
Fairfax County Health Department What Is In Your Well Water? - Paul Shannon; HD
GIS Mapping for the Dulles Suburban Center - Harry Rado; DPZ
Hot Spot Analysis For Fairfax County Assessments - Yorka Crespo; DTA
Immunization and Other Services Provided by Fairfax County Health Department Health Clinics (2014 to 2016 fiscal year) - Dennis Rojsuontikul; HD
Inspector Projects Data Layer - Yilia Vega-Claudio; Capital Facilities
Key Indicators Aggregated to Fairfax County Geographies - Sophia Dutton; NCS
Mount Vernon District Virtual Fly Through - Theodore Choi; Mount Vernon District Office
Pedestrian Crashes Within 500 Feet of the Mount Vernon Supervisor District - Jessica LeBlanc; PD
Risk Assessment and Prioritization for Fairfax County's Integrated Sanitary Sewer System - Matthew Doyle; Capital Facilities

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Snow Operation GIS Integration - Chip Galloway; DPWES Business Support Services
STEM Opportunities for Youth - Terry Reardon; NCS
Transportation Project Priorities - Tom Wampler; DOT
Urban Rodent Survey - Lauren Lochstampfor; HD
Utilizing ArcGIS Online, ArcGIS Pro, and Collector for Stream Project Scoping - Brett Martin; DPWES Business Support Services
Walkable Access to Fairfax County Park Entrances - Analysis for the Park Authority
Parks & Recreation System Master Plan - Justin Roberson; FCPA
Watersheds of Fairfax County - Chip Galloway; DPWES Business Support Services

Awardees by Category with Project Description

Best GIS Cartographic Product/Presentation

Individual/Team Awardees

Third Place

District Reference Map

Chip Galloway

Department of Public Works & Environmental Services, Business Support Services

Focused on the Braddock District, this map was updated from its previous version to include new features and use of a new basemap layer. In addition to being frame worthy, this map is packed with information about public facilities, major infrastructure, parks and jurisdictional boundaries.

A reference map was requested in late 2012. The idea was to create a cartographic product that was useful and aesthetically pleasing. Being a low priority project, minor changes and edit requests are months apart.

With the recent onset of basemaps, much of the original maps features have become obsolete. The Streets basemap was added to this map. By leveraging this new data source background features such as road labels and boundaries have been turned off.

Second Place

GIS Mapping for the Dulles Suburban Center

Harry Rado
Department of Planning and Zoning

This extensive land use planning project's goal is to analyze current conditions and make recommendations for development the Dulles Suburban Center, roughly the area of the county surrounding Dulles Airport.

Updated GIS maps and other products have been developed for use in the Comprehensive Plan text, to be used for Staff and Board of Supervisors analysis, and for large-scale community outreach events.

To date over 150 special-purpose maps and their supporting databases/GIS layers have been developed in the course of this BOS-authorized land use study.

These maps have been presented on the Web, in letter-size paper publications, and as large paper poster plots.

New maps were prepared covering the entire suburban center depicting roads, land units, airport noise contours, heritage sites, and environmental features. In addition for each of twelve focus areas a series of eight thematic maps were prepared showing:

- streets, roads and cultural features
- zoning cases
- existing land use
- planned land use
- zoning
- generalized zoning
- environmental features
- structures with year built

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First Place

Central Business Areas Report for General Services Administration

Harry Rado
Department of Planning and Zoning

This 196-page report by the Department of Planning and Zoning to the General Services Administration (GSA) is titled "Central Business Areas, Fairfax County, Virginia" and describes in detail 30 developed areas in Fairfax County which Fairfax County Government recommends to the Federal Government to purchase or lease for office, industrial and warehouse use.

Department of Planning & Zoning staff developed 47 pages of analysis of these developed areas and prepared 120 unique GIS-derived maps to illustrate the findings. Staff analysis describes the following factors or each center:
1) Local and Regional Planning and Economic Development Goals
2) Sustainability and Transportation Infrastructure and Plans
3) New and Existing Infrastructure and Resources
4) Protection of the Natural Environment

Each of 30 developed areas was illustrated with four new purpose-built maps:
1) Locator Map showing streets and rail transportation, shopping, parks, and other public facilities.
2) Existing Land Use Map developed from assessment files and inspections on-site and using remote sensing imagery.
3) Planned Land Use Map generated from GIS files and reflecting the Comprehensive Land Use Plan Map.
4) Generalized Zoning Map developed from GIS databases.

The result was published as a full-color 196-page, 8 1/2" x 11" spiral-bound book distributed to GSA and top county management.

Chris Wisner, GSA's Director of Portfolio Management & Real Estate, wrote this report ". . . was one of the most sophisticated and organized that we have seen."

Best Use of GIS for Analysis

Individual/Team Awardees

Third Place

Hot Spot Analysis for Fairfax County Assessments

Yorka Crespo

Department of Tax Administration

A hot spot map uses statistical analysis to identify geographic clusters of activity. Once the analysis is complete, an output feature class is added to the table. This feature class contains p-values and z-scores that indicate where features with either high or low values are spatially clustered. Clustering is displayed as hot and cold areas, identified through color variation. These areas are indicative of statistically significant clustering of high and low observations. The intensity of colors on the map identifies the level of probability that the observed spatial pattern was not random. In this analysis, the Hot Spot (Getis – Ord Gi*) tool was applied to the aggregate percent change in assessed value by tax neighborhood.

Aggregate change by tax neighborhood has been saved in DTA yearend reports since Tax Year 2008. These yearend reports are based on the January 1st assessment values. They are the most reliable source of historic assessment data. The original reports are saved as PDF files and contain statistical analysis categorized in several different ways. Mapping the statistic involves joining the data table to a tax neighborhood layer in Arcmap. Additional sources of data for the joins include historic parcel and tax neighborhood layers from the enterprise geodatabase.

Historic tax neighborhood layers are generally saved in DTA file geodatabases throughout the years however, in years where no tax neighborhood layer was saved, a query was run in the Discoverer reporting tool to generate a list of parcels in each tax neighborhood. This list was joined to a historic parcel layer in the enterprise geodatabase and parcels were aggregated based on their neighborhood using the Dissolve tool in ArcMap. The new layer could then be joined to the aggregate change data and the Hot Spot (Getis – Ord Gi*) Analysis could be run. Hot and cold spots in this analysis, are indicative of areas where there is a high probability that high or low aggregate changes in neighborhood assessment values are not randomly distributed.

The resulting maps identify areas in which there is a higher probability that the patterns of changes of assessment are not random. The layers produced can be

reviewed on their own to determine what areas of the county were increasing or decreasing in value and how commercial assessment change relates to residential assessment change. Hot spot layers can also be overlaid on top of other existing enterprise geodatabase layers for further analysis. These layers could include Development Centers, Supervisor Districts, Metro Stations, Zoning or they can be viewed with layers yet to be created like level of permitted construction activity. The layers can be shared with the Board of Supervisors, economic development groups or anyone that has an interest in reviewing assessment values as they relate to other economic indicators.

Second Place

Embark Richmond Highway Viewshed Analysis

Gayle Hooper
Park Authority

The use of GIS to analyze potential impacts to existing historic viewsheds required the compilation of a variety of data sources, not commonly utilized together – GIS, LiDAR, and SketchUp. GIS topo established the ground plane. The SketchUp models, that visualized future development, needed to be referenced to the existing topography. LiDAR data provided the reference for above grade structures and trees that could potentially break the line of sight between the historic structure and future development. It took quite a bit of effort to determine how to align and combine these data sources to generate meaningful results. To the knowledge of the team, this level of analysis has not been previously attempted.

The ability to assess visual impacts is of tremendous value in evaluating planned development. The method of analysis used for the Embark Richmond Highway Viewshed Analysis presented a means to intelligently discuss potential impacts as opposed to individual opinions of what might or might not be visible. Not only has this been of tremendous value in formulating Comprehensive Plan text for the Richmond Highway Corridor; but, the methodology will be highly useful in developing future Comprehensive Plan guidance as well as analyzing development applications.

First Place

Risk Assessment and Prioritization for Fairfax County's Integrated Sanitary Sewer System

Matthew Doyle

Capital Facilities

The Fairfax County Department of Public Works and Environmental Services, Wastewater Collection Division (DPWES, WCD) owns, operates and maintains over 3,400 miles of sanitary sewer collection lines spanning over 375 square miles that date back to the 1940's. With continuous residential and commercial growth within the County, the system requires new construction, ongoing maintenance, and real-time monitoring to allow WCD staff to quantify their risks, prioritize sewer segments within their system, and determine annual budgets required for their capital improvement program (CIP) and Operations and Maintenance (O&M) program.

In order to manage a sanitary sewer system with over 100,000 individual assets, a Geographic Information System (GIS) based asset management toolset was integral in reducing the labor-intensive efforts of evaluating overall risk and prioritizing work orders, capital improvement projects and O&M decisions for such a large collection network. The pilot test areas that were evaluated were large diameter sewer segments in the County's Arlington/Alexandria Sewershed, which is comprised of 224,000 linear feet of large diameter sewers ranging from 16" to 66" that were constructed between 1942 and 2013. This area was chosen due to the wide range of asset sizes, materials, and conditions, as well as the necessary supporting GIS and inspection data to implement a standardized condition and risk assessment.

Risk assessment and prioritization for asset management is based on two scores: Likelihood of Failure (LoF) and Consequence of Failure (CoF). The LoF score answers the question, "How likely is this asset to fail?" The CoF score answers the question, "What are the consequences if a failure occurs?" The main attribute that accounted for LoF was pipe condition, which included pipe age, pipe material, work order history and National Association of Sewer service Companies (NASSCO) certified condition assessment data. All of this data was easily available as GIS data or converted to shapefiles for use in GIS.

CoF is based off of a typical triple bottom line assessment of pipe externalities.

This included environmental impacts, community impacts and fiscal impacts. For example, the CoF of a pipe is higher if it crosses a stream, serves a major user, impacts railroads or is in a wetland. To provide CoF scores, WCD analyzed these segments utilizing geospatial data. The CoF scores were than weighted based on the overall impact. For example, how far does a pipe cross a stream? How deep is the pipe? How close is a pipe to a wetland? All of these analysis were designed and coded using Python scripting. In total, over X thousand lines of code were written to score risk and prioritize each sewer segment. Similarly, geospatial data was also incorporated with County historical bid data to develop cost models for preliminary cost estimates for rehabilitation and replacement of each sewer segment.
The resulting cost information and various maps and figures developed, allowed a plan to be established that included the location of pipes in critical need of improvement, cost projections for those improvements, and recommendations for various potential problem areas that should continue to be monitored.

Because of this successful pilot project, it is anticipated that the same methodology and tools can be used to evaluate other drainage basins in the County to keep the sewerage system functioning reliably. GIS will continue to be an important tool used in this process.

Best Web Application

Individual/Team Awardees

Second Place

Absentee Wait Time App

George Panagakos

Electoral Board

Fairfax County Office of Elections (OE) partnered with Fairfax County GIS & Mapping (GIS) to implement, design, and manage an absentee voting wait times web application for the 736,652 served by the November 2017 General & Special Elections in Fairfax County, Virginia. OE sought this application in an effort to provide voters dynamic wait time updates and map services to better account for sudden changes to the voting process. The project involved the use of a public-facing web page co-written by OE and GIS to display absentee voting schedules, locations, and location wait times, an ArcGIS Web Application managed by GIS to visually display location wait times through color scales and the use of location services, and a web-based entry application scripted by GIS and managed by OE per use of County-surplus iPhone 5c devices as reported from the county's 10 absentee voting locations: Fairfax County Government Center, Franconia Governmental Center, Lorton Library, Mason Governmental Center, McLean Governmental Center, North County Governmental Center, Providence Community Center, Sully Governmental Center, and West Springfield Governmental Center. The project remained active over a span of 25 days,

from October 11, 2017 through November 4, 2017.

First Place

STEM Opportunities for Youth

Terry Reardon

Countywide Service Integration and Planning Management

The STEM Opportunities for Youth map viewer is a web application intended to share data about a specific topic to a wide audience. There are hundreds of science, technology, engineering and math (STEM) classes, competitions, camps and other activities every year in Fairfax County. This web application places these activities in a spatial context making them easy to locate, quantify and plan around.

The audience for this application includes students and families who have an interest in STEM, as well as those students who want to learn more about STEM career opportunities. The map viewer will be hosted on a web page or portal that will contain additional resources intended to nurture the concept of STEM as a career rather than just a hobby. The viewer will be a direct way to inform county decision makers about STEM opportunities throughout the county, providing awareness of programs in their districts as well as any underserved areas. Finally, county business and community leaders in the STEM industry who wish to partner in a variety of ways including programming, sponsoring and mentoring, will be able to quickly determine where their resources will be best allocated.

To determine which specific data elements in the STEM Snapshot to include, the mapping work group, led by Office of Public Private Partnerships (OP3) and Countywide Service Integration and Planning Management (CSIPM), sorted through more than 100 programs. It was decided to focus first on public programs provided by NCS, FCPS (beyond the standard curriculum) and FCPL; the viewer will be expanded in stages, eventually including information on programs and activities provided by Fairfax County Park Authority; nonprofit providers, such as Children's Science Center and First Robotics; academic partners, including George Mason University, Northern Virginia Community College and Virginia Tech; and many business and corporate sponsors of STEM opportunities, activities, camps and competitions.

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Most Significant Data Contributor

Award Presented to Agencies

Key Data Indicators Aggregated to Fairfax County Geographies
Health and Human Services

The Fairfax County Health and Human Services (HHS) system has increased its use of data for planning and decision-making in recent years.
Data that was often used as a proxy for identifying households with low income and high human services needs was the Free- and Reduced-Price Lunch data reported by each school in Fairfax County Public Schools; however, other data types and sources such as demographics data do not align with school boundaries. American Community Survey (ACS) data at the census tract or ZIP code level available through FactFinder and PolicyMap were used extensively by HHS staff, but lacked an "apples to apples" comparison with the Free- and Reduced-Price Lunch data.

When Esri's Business Analyst software was identified as having capability to aggregate data to custom geographies, staff obtained data related to demographics and income as well as other variables of interest to the county's health and human services system such as households receiving Supplemental Nutrition Assistance Program (SNAP; formerly known as food stamps) and cost-burdened renters. The data were obtained from Esri and aggregated using Business Analyst to the elementary school attendance areas.

The aggregated data were then used to calculate indicators. For example, to calculate Percentage of Population Age 65+, the total population for five different age categories were summed and then divided by total population. For indicators calculated from aggregated 5-year ACS data, margin of error was also calculated.
Due to known interest in having the same indicators available for additional Fairfax County geographies, the data were also aggregated to the following geographies:

- Supervisor Districts
- High School Attendance Areas
- Middle School Attendance Areas
- ZIP Codes

The aggregated data was then loaded into the Fairfax County enterprise geodatabase and made accessible through the Data Loader and services so that staff can use ArcGIS or ArcGIS Online to view the data geographically. The data model also allows for the addition of annual updates in order to look at trends across the years. The data are now being used to answer questions such as:

- Which areas of Fairfax County have a greater concentration of pre-Kindergarten students that may need additional early childhood education services?
- Do the locations of existing services for older adults align with where county

residents aged 65 and older live? Are senior centers located in these areas to provide for the social engagement of older adults?

- Where do we need to do targeted outreach to connect individuals with disabilities with available services? Are there areas of the county where we need to increase service capacity for this population?

The assortment of key data indicators at these custom sub-county geographies provides a good snapshot of neighborhoods and other logical delivery areas for a wide variety of human services. Aggregating the data into these familiar geographies is the first step in making it easier to make better informed decisions for Fairfax County Health & Human Services.

Best Use of GIS for Public Outreach

Award Presented to Agencies

Mount Vernon District Virtual Fly Through

Board of Supervisors Mount Vernon District Office

Thirty years ago, Former Mount Vernon District Supervisor Gerry Hyland started a tradition in the Mount Vernon District of Fairfax County that has roots from his small hometown in Massachusetts. Growing up, Mr. Hyland, his family and friends would attend annual town hall meetings, a community forum where residents could have dialogue with elected officials. When this tradition was brought to Mount Vernon, Supervisor Hyland would inform the residents of future developments in the area by giving them a "bus tour", which was not actually a physical tour on a bus, but rather a presentation using pictures at each stop (new development).

On February 3, 2017, the 30th Mount Vernon District Town Hall Meeting took place with a new District Supervisor, Dan Storck. Mount Vernon residents and Supervisor Storck admired Supervisor Hyland's bus tour, it's what brought people back to the annual event and kept them there for its entirety because the bus tour was always the last event. However, this time, Supervisor Storck wanted to utilize and showcase the County's GIS capabilities. Using Terra Explorer, better known as Virtual Fairfax, a GIS tool available for all county residents to use, Supervisor Storck introduced 300 residents to a new style of "bus tour" called the Mount Vernon District Fly Through. What started as a hope and dream, transformed into one of the most futuristic presentation that was ever given at a Mount Vernon District Town Hall Meeting. A dramatic entrance and 360-degree view of Mount Vernon Estate launched the presentation with oohs & ahhs. There were 45 stops on the Virtual Fly Through presenta-

tion, and with the help of Terra Explorer, residents got a sweeping view of the district and had a better understanding of where the proposed development and issues in the community were located. The Virtual Fly Through was also live on Channel 16 during the event so that people could tune in on their TV at home and on Facebook Live.

Since the 30th Mount Vernon District Town Hall Meeting, Supervisor Storck has used the Virtual Fly Through presentation to explain his vision and goals for the District when meeting with the Mount Vernon-Lee Chamber of Commerce, Northern Virginia Association of Realtors, and many other organizations and individuals. The Virtual Fly Through presentation is available on the County website, through Channel 16 Video On Demand, and on Supervisor Storck's Facebook Live archive.

Best GIS Integration

Award Presented to Agencies (two awards)

Inspector Projects Data Layer
Capital Facilities

Traditionally, UDCD tracked construction projects on a spreadsheet. The Supervising Inspector would manually map Inspectors' projects in order to visualize the project locations. The Land Survey Branch supported UDCD Inspections by creating a data layer to house the projects as map pins, with color coding that allows easy identification of Tax Map, Project Name, Contract Number, Project Number, Contractor Information, Inspector, Project Engineer, and Remarks.
Ms. Vega trained the Supervising Inspectors on how to use ArcMap and the GIS Portal to access the map using Citrix, project data, Supervisor District, route numbers. Once the distribution of projects assigned to each Inspector became 'visual', the Supervising Inspector could use his staff more effectively, and reassigned some projects based on the 'visual' knowledge.

The Supervising Inspector can use this easily in Portal to view the locations and assign Inspectors based on location. Ultimately, this allows more efficiently planned inspections, maximizes the Inspectors time used for inspections versus travel, reduces wear and tear on county vehicles, and lessens our environmental impact of vehicle miles.
This type of GIS app helps in locations and in many different aspects of our work for example:

- Makes logical geographical assignment easier
- Eliminates driving all over the county when a project is right around the corner or

right up the road from an Inspector; allows bundling of assignments.
• Helps us assist our contractors with route numbers & street names for our VDOT requirements for LCAMS for lane closures on a daily basis.
• This has detailed information for upper management if complaints come in or if general concerns or issues arise.

This effort will continue to help the Inspection Section; the plan is to extend the practice of mapping the location of the projects in the North County area. When both areas are in the GIS Portal and each supervisor feels confident using this GIS tool, we can move forward using "Workforce for GIS" to integrate office and field data.
The supervisors will be able to:
• Achieve real-time awareness of staff.
• Plan and optimized Inspector's driving routes.
• Collect and maintain accurate daily reports for the office and the field.

Utilizing ArcGIS Online, ArcGIS Pro and Collector for Stream Project Scoping

Department of Public Works & Environmental Services, Business Support Services

The Stormwater Planning Division's Watershed Project Implementation Branch (WPIB) and Watershed Assessment Branch (WAB) are task to select and prioritize projects each year. Projects either come from the Watershed Management Plans (WMPs) or were nominated for potential implementation (additional projects). Data for the WMPs was already kept in the Proposed Watershed Management Plan Potential Projects Layer (PWMPPL).

Project Scoping is performed each year by interdisciplinary Stormwater Planning teams to rate projects for viability. In order to streamline scoping, this process was developed to ease data collection in the field and incorporate the project nomination process into PWMPPL. This is where Unique Identifiers and Project Names are assigned and projects extents are digitized. Candidates for stream scoping are selected from this layer, and any new nominations have to be added before they can be scoped.

We had already assigned ArcGIS Online accounts to the majority of Stormwater Planning staff for other Collector projects. This was the perfect opportunity to utilize ArcGIS Online for something other than just the Collector App and open everyone's

eyes to the possibilities of Web GIS. We set up several training sessions for staff and worked together to develop the workflow.
The stream scoping process before the implementation of this work flow with ArcGIS Online, ArcGIS Pro and Collector was extremely cumbersome, time consuming and left a lot of room for error. The Collector App of course got rid of the paper forms and maps, but leveraging ArcGIS Online to effectively crowd source projects, increased the agencies efficiency.

We are currently in our second season of project scoping with the Collector Apps. We implemented this workflow in the second season and Stormwater Planning staff have been pleased with the results. The integration of ArcGIS Online allowed us to involve everyone in the selection process, saving a great deal of time while also increasing the accuracy of Proposed Watershed Management Plan Potential Projects Layer (PWMP-PL).The program will be reassessed after the completion of fall 2017 Scoping and any necessary improvement will be implemented.

Thank you for attending the 2017 GIS Excellence Awards Ceremony. We hope to see you next year!

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