

**MEMORANDUM**

October 2, 2014

**TO:** Transportation, Infrastructure, Energy & Environment Committee

**FROM:** AT Aron Trombka, Senior Legislative Analyst  
QL Leslie Rubin, Senior Legislative Analyst  
Office of Legislative Oversight

**SUBJECT:** Update on Development of Agency Project Coordination Tool to Coordinate County Right-of-Way Construction Projects

The purpose of the session is for the Transportation, Infrastructure, Energy & Environment (T&E) Committee to receive an update from representatives of the Executive Branch and the Washington Suburban Sanitary Commission (WSSC) on the current status of the jointly-developed Agency Project Coordination (APC) Tool – an electronic tool to facilitate the exchange of information about planned and on-going construction projects in County rights-of-way. Committee members will also receive a live demonstration of the APC Tool. The development of the APC Tool stems from Council recommendations based on Office of Legislative Oversight (OLO) Report 2013-5: *Coordinating Utility and Transportation Work in County Rights-of-Way*. At today's briefing, Keith Compton from the Department of Transportation and Hala Flores and Ashwani Singh from WSSC will demonstrate the APC Tool and update the Committee on the status of the project.

**A. Background**

Report 2013-5, released on June 10, 2013, describes how the County Government and utilities exchange information about planned and on-going construction projects in County rights-of-way and identified opportunities to improve coordination between the County Government and utilities on rights-of-way projects. The T&E Committee held a worksession on the report on July 29, 2013.

The T&E Committee endorsed OLO's recommendations in Report 2013-5. The Council asked the County Government to work with local utilities, the Maryland Department of Transportation, and municipalities to create a GIS-based standard data set for sharing information about right-of-way projects from the County Government and other entities. The Council also recommended that the County Government evaluate the possibility of developing an online tool to provide the public with consolidated, up-to-date information about right-of-way construction projects. The T&E Committee received an update from Executive Branch and agency representatives on November 25, 2013 describing the status of the APC Tool, which was in development.

**B. April 2014 DOT Update on APC Tool**

Based on the T&E Committee's request at its November 2013 meeting, the Department of Transportation (DOT) Director sent a written update on the Agency Project Coordination Tool to the Committee in April 2014 (attached at ©1). The APC Tool has been developed jointly by senior technical and IT staff at WSSC

and the County Government based on existing WSSC technology. The Tool pulls together detailed DOT pavement management information and WSSC project information. DOT used the services of a software vendor to reconfigure its eRoadInfo® Pavement Management System to allow the system to transfer existing DOT data to the APC tool.

In addition to WSSC and Montgomery County DOT and the Department of Permitting Services, the following jurisdictions also are contributing data to the Tool:

- Washington Gas Company (incoming),
- State Highway Administration,
- Maryland Transit Authority Purple Line,
- City of Gaithersburg,
- City of Takoma Park,
- Village of Martin's Addition,
- Town of Washington Grove,
- Prince George's County Department of Permitting and Inspection Enforcement,
- City of College Park,
- Town of Cheverly,
- Town of University Park, and
- Town of Riverdale Park.

The Tool is scalable and can be expanded to include data from additional entities such as:

- Baltimore Gas and Electric,
- Pepco,
- Verizon,
- CATV,
- Fiber optic companies, and
- Other local municipalities (e.g., City of Rockville).

The team developing the APC Tool has identified four phases of the project:

- Phase I – Major Agency Data Sharing (90% complete),
- Phase II – Develop and Test Conflict Detection Tools (40% complete),
- Phase III – Integration of Municipalities and Other Utilities (60% complete), and
- Phase IV – Develop Public Interface/Other Enhancements (TBD).

### **C. Presentation**

At today's session, the T&E Committee will receive a live demonstration of the APC Tool from representatives of the County Government and utilities. A copy of the presentation slides begin on ©5.

### **D. Discussion Questions**

Following the presentation, Councilmembers may wish to discuss the following questions with representatives of the County Government and utilities.

1. County policy places a moratorium on cutting pavement in new roads for five years and reconstructed roads for three years. How has the development of the APC tool affected implementation of the moratorium policy? How has the APC tool otherwise affected the permitting process for utility work in rights-of-way?
2. Phase IV of the project involves development of a tool to inform the public about planned right-of-way construction work. What type of information will be made available to the public? How will the public access this information?



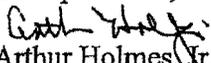
DEPARTMENT OF TRANSPORTATION

Isiah Leggett  
County Executive

Arthur Holmes, Jr.  
Director

MEMORANDUM

April 12, 2014

TO: Transportation, Infrastructure, Energy & Environment Committee (T&E)  
FROM:  Arthur Holmes, Jr., Director, Department of Transportation  
SUBJECT: Update on Agency Project Coordination Tool (APC)

This is in response to a request from T&E Committee that the Department of Transportation (DOT) provide a written narrative update on the progress, to date, on the Agency Project Coordination Tool (APC) being jointly developed with the Washington Suburban Sanitary Commission (WSSC). The Office of Legislative Oversight (OLO) presented DOT with several questions; the responses to which will provide the update.

I have provided information below in the order and format presented by OLO:

**1. Current Status of APC tool:**

I am happy to report that the APC initiative is progressing in the direction envisioned by Bill 2-13 and its end users. Since our last update to T&E, the team developing this tool has made good and steady progress. As you may recall, the Washington Suburban Sanitary Commission (WSSC) had already started the development of an automated tool analogous to the requirements of Bill 2-14. After careful consideration of other solutions and a comprehensive review of the WSSC project, MCDOT joined forces with the WSSC in its further development of APC as MCDOT and the WSSC are without question the biggest players in the need to coordinate road resurfacing and utility infrastructure work. Both the WSSC (water and sewer) and MCDOT have robust long-term infrastructure maintenance and replacement programs. The decision to join forces with the WSSC assured that both agencies are sharing a single similar platform for conflict identification and resolution.

At present, MCDOT, WSSC (water and sewer project), Prince George's County Department of Permitting and Inspection Enforcement (DPIE), State Highway Administration (SHA), the Maryland Transit Authority Purple Line, City of Takoma Park, and the City of College Park are contributors of project data to the APC tool. This in itself is significant and represents noteworthy forward progress. Additionally, the APC tool is 'scalable' and will evolve - over time - to include similar data from entities whose planned projects within the county rights-of-way (ROW) have the potential for conflict with MCDOT, WSSC and other entities

Office of the Director

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Located one block west of the Rockville Metro Station

whose planned projects; including the Washington Gas Company (WGL), Pepco, Verizon, Cable Companies, Communication Companies and other local municipalities will be made available to APC. At present we envision the WGL to be the next participant as much of their infrastructure is located beneath the pavement.

A key component in the APC environment is detailed information that already exists in MCDOT's Pavement Management System software; eRoadInfo®. This information is currently used by MCDOT to rate the condition of all roads in the county transportation system and assign relative Pavement Condition Indices (PCI) and in the development of its annual resurfacing schedules.

MCDOT's Pavement Management System is designed to optimize resurfacing budgets recommended by the Executive and approved by Council. In order for MCDOT's detailed pavement management information to be extracted from eRoadInfo® and imported into APC, reconfiguration of eRoadInfo® was required to include the fields required in APC. The matching fields are required in order to provide a robust examination of all projects in planning, design and construction involving both agencies. The reconfiguration of eRoadInfo® is now complete. It should be noted that reconfiguration of MCDOT's eRoadInfo® software required the software vendor approximately eight (8) weeks to complete. This meets a major milestone since our last update to the T&E and places the launching of Phase One of APC on the near horizon. However, more work is required prior to a demo.

In order to transfer data from MCDOT's eRoadInfo® to APC, eRoadInfo® had to be configured to augment its existing capabilities with a **project management component**. It is helpful to note that eRoadInfo® is a product developed on ESRI ArcGIS platform that is rich in geospatial functionality as well as data storage and processing. The reconfiguration was designed to be compatible with APC objectives and includes the addition of a number of fields specifically requested by WSSC to be consumed by APC.

Now that the new fields are available in eRoadInfo®, MCDOT has entered detailed information including both future resurfacing as well as moratorium data in eRoadInfo® to be made available to APC for FY14-FY16. The next step, which is already in progress, is for Montgomery County Department of Technology Services (DTS) to develop an Enterprise Service Bus (ESB) service, an automated data extraction nightly from eRoadInfo® and transferred to a geospatial database (ESRI ArcSDE) for consumption by APC. The team also included the Department of Permitting Services who is working with the WSSC to standardize permit numbers and associated project numbers to be displayed in APC. Again, there is more work to do before permit display becomes seamless.

In short, the team believes it is approximately four (4) weeks from demonstrating the prerelease of Phase One of the APC tool. If this is successful, as we believe, Phase One information will immediately be available for use by WSSC, MCDOT and DPS for coordination purposes and visual conflict resolution. Phase Two of APC will include automated conflict identification as described later in this update.

## **2. Expected completion of the first phase:**

As noted above, Phase One of APC is on the near horizon. An optimistic schedule has Phase One implementing in the next six (6) to eight weeks. However, it must be noted that MCDOT, DTS, DPS and the WSSC are utilizing existing human resources to integrate MCDOT Pavement Management System (eRoadInfo) data and permit data with APC tool in an effort to reach the Phase One milestone. The use of existing 'management level' human resources is required because of the inherent knowledge of business processes and overarching policies related to road resurfacing, water and sewer planning, permitting, design and construction and conflict resolution. Therefore, the project's schedule, including Phase Two, is embedded into the normal work schedule of MCDOT's required resources (e.g. Division Chief, IT Project Lead, etc) as well as similar and comparable resources at the WSSC, DTS, and DPS that is often fluid and influenced by short term emergencies, winter operations and summer storms.

## **3. Expected timeline for subsequent phase**

Development of a timeline for subsequent phases of APC meets the same human resource constraints noted above.

Phase Two of APC will include automatic project conflict detection and notification features that will be developed by WSSC IT resources with fewer contributions from County departments including MCDOT, DTS and DPS. Upon the completion of Phase Two, APC will generate automated notification messages to engaged parties when the system detects a conflict in projects across the agencies participating in the initiative. Conflict notifications are designed to ultimately avoid conflicts and prompt dialog resulting in shifting schedules of projects and opportunities to leverage funding for pavement restoration. We are excited about these opportunities. The schedule for Phase Two with its automated conflict identification feature is largely unknown at this point in time. The team will be better positioned to estimate its schedule upon completion of Phase One.

Following Phase Two, MCDOT and WSSC will both reach out to other entities to include data (projects) to be incorporated into APC to increase its scope and utility. Such entities will include Washington Gas Company (WGL), Potomac Electric Power Company (PEPCO), cable companies, and municipalities.

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April 12, 2014

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It is impractical to suggest a schedule at this time for inclusion of the above noted agencies as both the WSSC and MCDOT will be required to enter into written agreements with each agency regarding the use and publication of its data especially as we work towards a public facing side of APC. Nevertheless, this process and progress will continue.

#### **4. Known costs to develop the tool**

As stated earlier, MCDOT and DTS are utilizing existing resources. There was an additional expense of adding the project management component to eRoadInfo at a cost of \$25,000.

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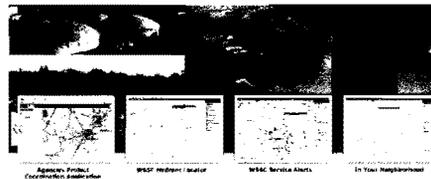
# WSSC APC Tool Update Presentation

October 6, 2014



Public Right Of Way Permits

Application Type	Permit Number	Work Type	Use Code	Added Date
PUBLIC RIGHT OF	216276	CONSTRUCT	ORWAYWAY	03/27/2012
PUBLIC RIGHT OF	261762	CONSTRUCT	ORWAYWAY	09/26/2010
PUBLIC RIGHT OF	252873	INSTALL	PUBLIC UTILITY	06/28/2013
PUBLIC RIGHT OF	214332	INSTALL	PUBLIC UTILITY	11/13/2009
PUBLIC RIGHT OF	210206	INSTALL	PUBLIC UTILITY	02/19/2009



## Agenda

1. Current status of the APC tool
2. Current and future APC participants
3. APC Framework and Live Demo
4. Future developments and timeline
5. Public access to online ROW construction information
6. Program Highlights/Next Steps
7. Question and Comments



## Current Status of APC Tool

- MCDOT, WSSC and SHA are currently *using* the APC Tool to coordinate respective work in the Right-Of-Way
- Agencies are sharing geographic and attribute data for both planned and historic projects
- Visual detection of conflicts now available
- Internal user accounts are established



## Current and Future APC Participants

- Current Participants - Major Players

- Washington Suburban Sanitary Commission 
- Montgomery County DOT and DPS 
- State Highway Administration 
- Prince Georges County 
- Washington Gas (Incoming Participant) 

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## Current APC Participants, Continued

### Montgomery County

- City of Gaithersburg
- Village of Martin's Addition
- Town of Washington Grove
- City of Takoma Park



### Prince George's County

- City of College Park
- Town of Cheverly
- Town of University Park
- Town of Riverdale Park

Note: These participants provide project info to WSSC for inclusion in APC



## Incoming APC Participant

- Washington Gas Light Company (WGL) 
  - Developing template for data confidentiality agreements.
  - Acquired GIS software platform compatible with WSSC and MDOT hosted web services.
  - Used new platform to successfully identify FY14/15 conflicts with MDOT projects.
  - Internally defined a set of fields and formats for sharing data with external agencies.
  - Meeting scheduled with agency GIS/IT Counterparts to detail an implementation strategy.

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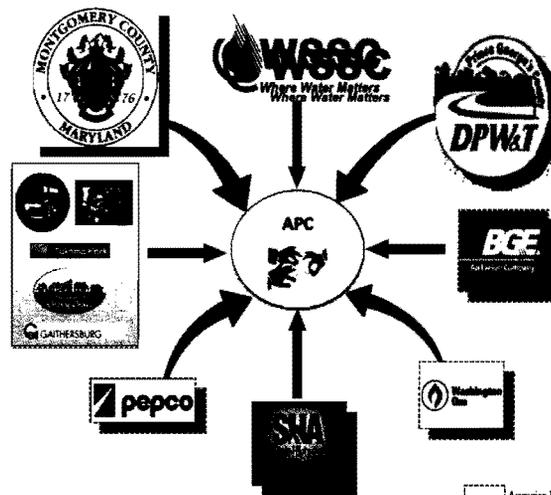
## Future APC Participants

- Pepco
- Baltimore Gas and Electric Co. (BGE)
- Verizon
- CATV
- Fiber Optic Companies
- City of Rockville

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## APC Framework

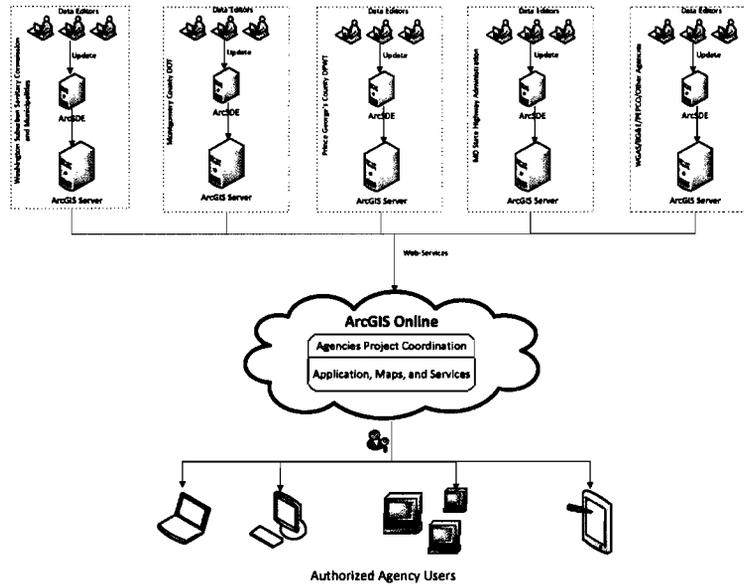


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## APC Framework (cont'd)

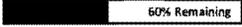


## Live Demonstration

- Visual Detection Demo:  
<http://wssc.maps.arcgis.com/home/>
- Conflict Analysis Prototype Demo:  
<http://gisweb.wsscwater.com/apc/>



## Future Developments and Timeline

- **Phase I: Major Agency Data Sharing** (90% complete)
  - Inclusion of WGL will complete this phase 
- **Phase II: Develop and Test Conflict Detection Tools** (40% complete)
  - Visual detection already available 
  - Expect completion of this Phase by 7/1/2015 (WSSC)
- **Phase III: Integration of Municipalities & Other Utilities** (60% complete)
  - Expect completion by 12/2015 
- **Phase IV: Develop Public Interface/Other Enhancements**
  - TBD

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## Public Access to Online ROW Construction Information

- The schedule for a public facing side of APC has yet to be developed
- Current focus is to complete Phases I-III
- MCDOT's portfolio currently shown on its website
- WSSC's portfolio currently shown on its website
- APC showing all work in the ROW will be available to public in the not too distant future

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## Next Steps

- Continue progress on Phases I-IV
- Work on Public Facing Side of APC
- Leverage other opportunities of APC



## Program Highlights

- Program is a model of coordination, communication, cooperation and collaboration among large public agencies
- Program's Human Resource requirements include Senior Management (Technical and IT) from respective agencies
- Program totally grown in-house leveraging existing resources



## Questions and Comments