

MEMORANDUM

November 21, 2013

TO: Transportation, Infrastructure, Energy & Environment Committee

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

SUBJECT: Follow Up to Office of Legislative Oversight Report 2013-5: *Coordinating Utility and Transportation Work in County Rights-of-Way*

The purpose of the session is for the Transportation, Infrastructure, Energy & Environment (T&E) Committee to receive a briefing from representatives of the Executive Branch and local utilities on the implementation of the Council recommendations resulting from Office of Legislative Oversight (OLO) Report 2013-5: *Coordinating Utility and Transportation Work in County Rights-of-Way*. Report 2013-5 describes how the County Government and utilities exchange information about planned and on-going construction projects in County rights-of-way. The report also identifies opportunities to improve coordination of right-of-way projects between the County Government and utilities. The Executive Summary for Report 2013-5 appears on © 1-4. Comments on Report 2013-5 from the Chief Administrative Officer appear on © 5-6.

A. COUNCIL RECOMMENDATIONS

The T&E Committee held a worksession on Report 2013-5 on July 29, 2013. At that worksession, the T&E Committee made two recommendations for Council approval.

1. Request that the Executive report to the Council about the feasibility, implementation requirements, and cost of creating an interagency right-of-way project tracking system.

The T&E Committee recommended that the County Government work with local utilities, the Maryland Department of Transportation, and municipalities to develop a more systemized approach to the sharing of information and coordination of infrastructure improvements in County rights-of-way. Specifically, the County Government should evaluate the feasibility and cost of creating a GIS-based standard data set for sharing information about right-of-way projects from the County Government and other entities.

The Committee also recommended that the County Government evaluate the possibility of using data from a shared project tracking system to develop an online tool to provide the public with consolidated, up-to-date information about right-of-way construction projects.

Finally, the T&E Committee recommended that the Council request that the Executive report back to the Council about implementation of an interagency right-of-way project tracking system. The report should:

- Describe the detailed functional requirements of the application;
- Estimate development and maintenance costs for the standardized data set and application using in-house resources and/or a commercial product; estimate the staff time savings resulting from data standardization and automated inter-agency project tracking;
- Describe interagency agreements (e.g., memoranda of understanding, service level agreements) needed to standardize, integrate, and share data sets;
- Present a plan to develop an online tool to provide the public with consolidated information about right-of-way construction projects;
- Identify the relative priority of a right-of-way infrastructure data set compared to other items on the dataMontgomery implementation plan; and
- Include a recommendation from the Executive of whether the benefits of the system justify the estimated costs.

2. Request that the Executive refine and provide more specificity regarding the implementation requirements of pavement cutting moratoriums.

The T&E Committee recommended that the Council request that the Executive further define the implementation requirements for pavement cutting moratoriums. Specifically, the T&E Committee recommends that the County Government:

- a. Develop a protocol to routinely share GIS-coded moratorium data with utilities. This could be achieved either as part of the project tracking system described in Recommendation #1 or as a separate practice.
- b. Establish a mechanism to notify permit holders when a roadway goes into moratorium. In addition, DPS could add a condition to utility permits stating that the authorization to cut pavement under the permit automatically terminates when a road goes into moratorium (unless a waiver is granted).
- c. Refine the definition of the moratorium period for resurfaced and reconstructed roads. For example, DPS could amend the *Specifications for Utility Construction Permit* to stipulate that a road goes under moratorium once the resurfacing of a specific road is complete and that the moratorium continues for three years after completion of the entire project.

The full Council approved the T&E recommendations on July 29.

B. BILL 2-13

On October 22, 2013, the Council approved Bill 2-13, *Streets and Roads Reconstruction –Coordination*. Bill 2-13 amended the County Code to require the Director of the Department of Transportation to adopt a 5-year schedule of reconstruction, rehabilitation, and resurfacing to County sidewalks, streets, and roads, and to publicize that schedule. In addition, the bill directed the County Government to take all feasible steps to coordinate the County's reconstruction, rehabilitation, and resurfacing activities with those of other government agencies, public utilities, and other entities.

C. PRESENTATION

At today's session, the T&E Committee will hear from representatives of the County Government and utilities on progress made to date on implementing the recommendations of Report 2013-5. Specifically, the County Government and WSSC have prepared a joint presentation on the status of work to develop an interagency right-of-way project tracking system (Recommendation #1). A copy of the presentation slides begin on © 7.

In addition, OLO asked the County Government to prepare a brief update on the status of modifications to the pavement cutting moratorium process (Recommendation #2).

Coordinating Utility and Transportation Work in County Rights-of-Way

OLO Report Number 2013-5

June 11, 2013

Rights-of-way are public land dedicated for roadways and for other transportation, electricity, natural gas, water, sewer, and telecommunication infrastructure. Both the County's Department of Transportation (DOT) and utility companies build and maintain infrastructure in County rights-of-way.

Utilities often cut through existing roadway pavement to install, repair, or improve underground lines. The County Government's Department of Permitting Services (DPS) regulates construction work in rights-of-way by issuing utility work permits. The vast majority of utility work in County rights-of-way involves water and sewer lines, followed second by gas lines. Major pavement cutting is less common for electricity and telecommunications lines.

County Roadway Maintenance

DOT maintains County roads through systematic maintenance and rehabilitation. DOT periodically rates the condition of pavement of all County maintained roads based on criteria that include the level of (1) pavement distress, (2) pavement patching and utility cuts, (3) depressions and rutting, (4) pavement weathering, and (5) the volume and type of traffic using the road. DOT last rated the roadway pavement conditions in 2010 and plans to conduct a new survey beginning in the Spring of 2013. The table below summarizes the 2010 ratings.

Pavement Condition of County-Maintained Roads – 2010

Condition	Lane Miles	Percent of Total Lane Miles	Condition	Lane Miles	Percent of Total Lane Miles
Residential/Rural Roads			Primary/Arterial Roads		
Very Good	414 miles	10%	Very Good	174 miles	18%
Good	663 miles	16%	Good	232 miles	24%
Fair	2,486 miles	60%	Fair	454 miles	47%
Poor	414 miles	10%	Poor	58 miles	6%
Very Poor	166 miles	4%	Very Poor	48 miles	5%

The annual schedule for roadway preventative maintenance, repair, resurfacing, and rehabilitation projects is subject to funding availability – funding roadway maintenance through the annual operating budget and roadway resurfacing projects through the capital improvements program. Annual funding for Fiscal Years 2008 through 2013 is summarized in the table below.

Pavement Management Program Funding History (\$ in millions)

	FY08	FY09	FY10	FY11	FY12	FY13
Resurfacing (CIP)	\$8.2	\$11.0	\$25.7	\$23.7	\$8.0	19.3
Rehabilitation (CIP)	--	\$1.0	\$1.7	\$4.1	\$5.4	\$6.6
Permanent Patching (CIP)	--	--	--	\$3.0	\$3.0	\$6.5
Resurfacing (Operating Budget)	\$2.5	\$2.7	\$2.7	\$0.3	\$0.9	\$1.8
TOTAL	\$10.7	\$14.7	\$30.1	\$31.1	\$17.3	\$34.2

Permitting

Utilities must obtain a permit for construction projects in County rights-of-way. DPS issues permits only to utilities that register with "Miss Utility," have a franchise agreement with the County, and that submit an application for each work location (applications identify whether a project will include pavement cuts). DPS issued the following number of permits to utilities between 2010 and 2012:

2010: 1,181 permits

2011: 1,596 permits

2012: 2,181 permits

DPS permits require all utility right-of way construction to comply with the standards in DPS' *Montgomery County Specifications for Utility Construction Permit*. DPS permits are valid for 18 months with the option of a 12-month extension. Utilities must meet with DPS inspectors at least 48 hours before the start of work to review permit requirements for a project and DPS staff inspect a site during and after construction to ensure compliance with permit and regulatory requirements.

DPS does not routinely transmit utility permit information to DOT or the utilities. While DOT and WSSC both have access to DPS' database of permit data, WSSC representatives report that the system does not allow users to search the status of their own projects and others projects in a user friendly manner. WSSC staff primarily receive and exchange information with DPS staff about pending and/or existing permits via telephone communications.

Effects of Pavement Cutting on County Roadways

A review of research literature finds universal agreement that cutting roads has a measurable negative impact on road performance and maintenance costs. For example, a 2003 research report submitted to the Transportation Research Board of the National Academy of Sciences found that pavement cuts lead to structural deterioration (relating to pavement condition affecting load-carrying capacity) and functional deterioration (relating to the smoothness of the riding surface) of roads. The study found that cutting roads reduces the life of roads and increases repair and remediation costs.

In 1995, a San Francisco State University research team found that utility cuts accelerate the pavement aging process and estimated that cuts reduce the service life of pavement by 30% to 50%. A subsequent study commissioned by the City of San Francisco confirmed these findings.

Road Moratoriums

DPS' *Specifications for Utility Construction Permit* prohibits cutting a newly built road for five years or a newly reconstructed road for three years (except in emergency situations and new service connections). A road goes under moratorium once resurfacing is complete, and if a project includes multiple roads, DOT will restart the three-year moratorium period for all roads in the project when the entire project is complete. DOT sends a list of roads under moratorium to utilities quarterly, but does not GIS-code the information.

DPS reviews whether a road is under moratorium when issuing a permit, but does not routinely check the moratorium status of roads or DOT's project schedules before renewing permits. Currently, DPS does not notify utilities that hold valid permits to work on a road when a road goes into moratorium.

Interagency Coordination

When DOT and a utility learn through exchanged information that both agencies have pavement work planned for the same road segment, the agencies attempt to sequence and time the projects to minimize the construction impact on the neighborhood and to assure that utility pavement cuts occur before DOT begins any roadway reconstruction or pavement resurfacing.

Information Sharing. To identify potential project conflicts, DOT shares information about right-of-way work with utilities that operate in the County. Although the Department has no written policies or standards for information sharing, DOT staff routinely exchange project information with utilities, including:

Exchange	Period	Description
Annual Project Schedules	Annually in May	A spreadsheet of County road rehabilitation, resurfacing, and patching projects planned for the next four fiscal years.
GIS Information	Quarterly	Electronically map-able current and planned road projects (County) and current and planned water and sewer projects (WSSC).
Electronic Documents	Ongoing	Project files, drawings, photographs, and other data shared through "e-Builder" – an electronic construction document management product.
Quarterly Project Status Meetings	Quarterly – in person	Roadway (County), water and sewer (WSSC), and gas (Washington Gas) project-specific status meetings to identify and resolve potential project conflicts. DOT meets separately with WSSC and Washington Gas staff.
Pavement Cut Moratorium Report	Quarterly	A list of newly built or reconstructed streets that utilities are prohibited from cutting for 3-5 years.
Bi-Weekly Project Status Reports	Updated every two weeks	A spreadsheet of current fiscal year pavement projects that includes: project location; the type of work; estimates of project costs; start and completion dates; the contractor performing the work; and a DOT inspector's contact information. Send to WSSC and Washington Gas.

Current information sharing practices help identify potential conflicts between County Government and utility construction plans. Nonetheless, utility representatives report that information currently received from the County Government is not in optimal form because much of the data is not GIS-coded, the County provides infrequent status updates, and data is not standardized.

MOUs. When possible, DOT will schedule a resurfacing project immediately following completion of a utility project on the same road segment, allowing the utility to put in a temporary patch over its work in anticipation of the imminent County resurfacing. In these instances, DOT and the utility enter into a memorandum of understanding (MOU) to share the cost of the pavement restoration – with the County's contractor performing road repair and the utility paying the County an amount equal to the cost of pavement restoration work that would have been required absent the DOT project.

Case Studies. DOT and utilities have developed practices to share information about current and planned project work that promote project coordination. In multiple cases, DOT and WSSC have identified potential conflicts in advance and adjusted project schedules to minimize both pavement degradation and community disruption (see Middlebrook Road case study in Chapter IV). Some limitations of current practices, however, came to light in the fall of 2012 when a WSSC contractor nearly trench cut a newly reconstructed road in the Forest Glen area of Silver Spring (see Chapter IV).

Assessment of Current Practices and Opportunities for Improvement

In the past five years, the Department of Transportation (DOT), the Department of Permitting Services (DPS), the Washington Suburban Sanitary Commission (WSSC), and others have improved interagency communication about right-of-way construction programs in order to minimize pavement cuts, reduce community disruption, and share costs. The system for sharing information, however, still has limitations, which include:

Absence of central information repository. No single, central repository exists to house and connect County Government and utility project level information such as maps, permits, design plans, construction status, contact information, or schedules – leading to gaps in information. For example, shared GIS data does not include data about project start dates or road moratoriums, and utilities have no way to learn of right-of-way permits issued by the County for other utilities.

Non-standardized data. No standards exist for data shared among DOT, DPS, and the utilities. For example, some agency data give non-standardized names to different sections of a road preventing other systems from identifying or mapping the location of the section.

Uneven processes for updating project status. Project schedules for road and utility work are unavoidably subject to change (e.g., funding changes, weather), affecting the timing and sequencing of pavement work. The County Government and the utilities do not have a practice for frequent mid-year updating of project schedules, leading to potential project delay and leaving staff unaware of important status changes, such as new road moratoriums.

Uncertainty regarding road moratorium status. DOT does not provide GIS-coded data with the location of roads under moratorium and utilities cannot easily integrate moratorium data into their GIS-based project management systems. Additionally, no mechanism exists to notify utilities with existing permits that a road has gone into moratorium status.

Inability to present consolidated information to the public. The County Government and some utility websites provide the public with information about planned right-of-way work. However, no website or other source currently exists for members of the public to view consolidated information about all planned County and utility right-of-way work.

Office of Legislative Oversight Recommendations

#1: Interagency Right-of-Way Project Tracking System

The County Government DOT, DPS and Department of Technology Services (DTS) should evaluate the feasibility and cost of creating a GIS-based standard data set stored in a single repository with an integrated application – for sharing right-of-way project data among DOT, DPS, and utilities. The Executive should report back to the Council by November 1, 2013 about the feasibility of developing a system, which should also include ways to provide the public with up-to-date information about pending rights-of-way construction projects.

#2: Pavement Cutting Moratoriums

The effectiveness of the pavement cut moratorium policy is limited by several current conditions, such as the lack of GIS-coded data, lack of notification to permit holders when roads go under moratorium, and changing moratorium end dates. To address each of these conditions, OLO recommends that the County Government:

- a. Develop a protocol to routinely share GIS-coded moratorium data with utilities.
- b. Establish a mechanism to notify permit holders when a roadway goes into moratorium and include a permit condition that authorization to cut pavement automatically terminates (absent a waiver) when a road goes into moratorium.
- c. Refine the definition of the moratorium period for resurfaced and reconstructed roads.



OFFICE OF THE COUNTY EXECUTIVE

Isiah Leggett
County Executive

MEMORANDUM

Timothy L. Firestine
Chief Administrative Officer

May 29, 2013

TO: Chris Cihlar, Director, Office of Legislative Oversight
FROM: Timothy L. Firestine, Chief Administrative Office *Timothy L. Firestine*
SUBJECT: OLO Draft Report No. 2013-5
Coordinating Utility and Transportation Work in County Rights-of-Way

I am in receipt of the Draft Report No. 2013-5 dated April 30, 2013, addressing Coordinating Utility and Transportation Work in the County Rights-of-Way. Your assessment of current practices is thorough and well detailed. I agree with your overall recommendation that a seamless standardized interagency GIS-based data repository to access and view real-time information about all planned right-of-way construction and maintenance activities would augment and encapsulate current coordination practices to the benefit of all affected parties.

In response to the report's recommendations, I offer the following comments:

OLO Recommendation #1:

Request that the Executive report to the Council about the feasibility, implementation requirements, and the cost of creating an interagency right-of-way project tracking system.

CAO Response to OLO Recommendation #1:

We will engage the local utilities to evaluate the feasibility and estimate the preliminary costs associated with creating a multi-organizational GIS-based standardized data set(s) for sharing information and tracking of projects planned in the public right-of-way. As you know, as part of a recent Council enacted Open Data legislation (Bill 23-12) and also our dataMontgomery initiative, we license and use an open data platform, known as Socrata. This is consistent with the four overarching principles ("Information-Centric", "Shared Platform", "Customer-Centric" and "Security and Privacy") that are driving the County's application design strategy. For details, please refer to Montgomery County's Digital Government Strategy and dataMontgomery program via the following links:

- <http://www.montgomerycountymd.gov/open/Resources/Files/openMontgomery-Digital-Government-Strategy.pdf>
- <http://data.montgomerycountymd.gov/>

For this multi-jurisdictional issue, in addition to the dataMontgomery open data platform, we will explore other options for developing and publishing the standardized data-set(s). The evaluation will encompass evaluating the possibility of using data from a standard data set to

Chris Cihlar, Director, Office of Legislative Oversight
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Coordinating Utility and Transportation Work in County Rights-of-Way
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develop an online tool to provide the public with consolidated, up-to-date information about rights-of-way construction projects.

However, given the number of utility agencies involved in this undertaking and their specific data related or systems challenges, and also our still under development Open Data Implantation Plan, a report by November 1, 2013, may only be feasible in preliminary form. I hope it is understood that the success and schedule of this undertaking will depend solely on the cooperation of all utility agencies and outside entities.

OLO Recommendation #2

Request that the Executive refine and provide more specificity regarding the implementation requirement of pavement cutting moratoriums.

CAO Response to OLO Recommendation #2

We will develop a protocol to share GIS-coded moratorium data with the utilities. I envision this being accomplished in the development of a GIS-based standard data set(s) for sharing information about projects planned in the public right-of-way to include moratorium data with utilities. Likewise, we will develop a mechanism to notify permit holders when a roadway goes into moratorium. Lastly, we will be more specific with respect to the initiation of a moratorium on specific roads and the end date for such moratorium.

If you have any questions or need additional information, please contact Fariba Kassiri, Assistant Chief Administrative Officer. Again, I thank the Office of Legislative Oversight for its detailed work on this program.

TF:swl

cc: Fariba Kassiri, Assistant Chief Administrative Officer
Arthur Holmes, Jr., Director, Department of Transportation
Sonny Segal, Director, Department of Technology Services
Diane Jones, Director, Department of Permitting Services



**Washington Suburban
Sanitary Commission**

MCG-WSSC

Agency Project Coordination (APC) Tool for
Coordinating Utility and Transportation Work in
County Rights-of-Way

November 25, 2013

2



Collaborative MCG-WSSC Data Sharing Objective

- Develop and maintain an automated information sharing and mapping system covering planned construction projects within County rights-of-way.
- Develop a standardized interagency data repository that includes geographic information enabling geographic information system (GIS) based application (s) to access and view current information about all planned rights-of-way construction and maintenance activities.
- Data and data application(s) to be designed to allow access to recently-completed, current, and planned projects.
- Provide County and utility company(ies) staff with direct links to up-to-date information such as project location, scope, design plans, permit status, schedule, cost, moratorium status, and points of contact



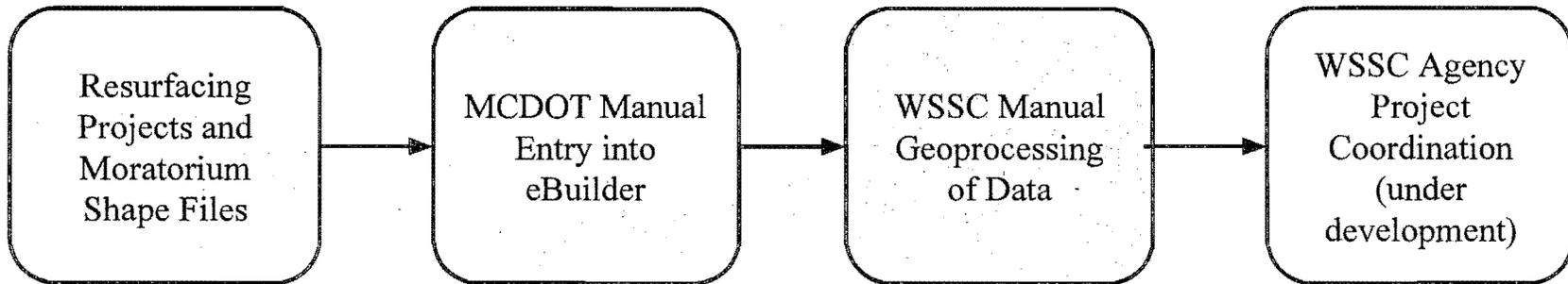
Collaborative MCG-WSSC Data Sharing Coordination Overview

- Current processes include periodic manual updates, repeated data entry and table based look ups.
- Approach is to leverage existing and new GIS based and automated enterprise systems to automate, streamline and enhance the coordination process.
- The use of COTS software and shared cloud services, along with documented standards will enable all utilities and agencies to participate.
- The project will encompass multiple phases beginning with an interim phase
 - Interim Phase - MCG placing GIS information on ArcGIS Representational State Transfer (REST) Service for WSSC consumption (currently underway)
 - Phase 1 - initial automated data sharing and displays (internal) WSSC and MCDOT
 - Phase 2 - enhance data sharing with conflict identification (internal) - WSSC and MCDOT
 - Phase 3 - extend data sharing to municipalities and utility companies (internal) WSSC and MCG
 - Phase 4 - public data sharing and displays - MCG lead



MCG-WSSC Data Sharing Coordination

First Effort to Share Data



- MCDOT manually prepares resurfacing projects and moratorium shape files on a quarterly basis
- MCDOT manually enters shape files into the eBuilder system (WSSC's Content Management System)
- WSSC manually processes MCDOT shape files to be visualized for potential conflict as APC tool development continues
- This effort was labor intensive on both MCDOT and the WSSC to visualize and identify potential conflict(s)
- APC development initiated and an interim solution was explored

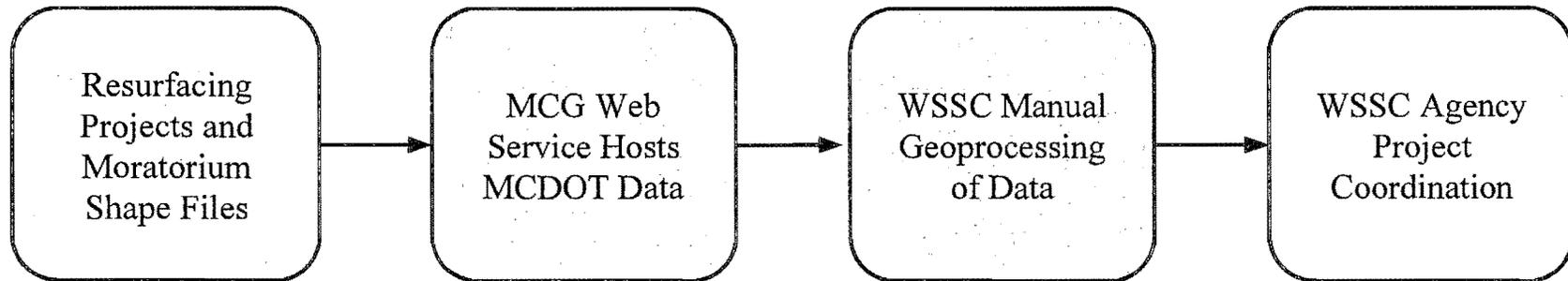


MCG-WSSC Data Sharing Coordination Overview - Interim Phase

- APC tool development underway and progressing
- MCG placing resurfacing GIS Shape Files on REST Service for WSSC consumption (currently underway)
- This is an enhancement over previous manual efforts of data transfer and thus far is proving effective
- This phase includes publishing all DPS ROW permits with WSSC and other Utilities project numbers
- DOT's data is now shown internally with WSSC water and sewer data as planned
- All data is being viewed by the WSSC on APC tool now functioning at rudimentary levels



MCG-WSSC Data Sharing Coordination Interim Solution



- MCDOT manually prepares resurfacing projects and moratorium shape files on a quarterly basis
- DTS links MCDOT data to APC in an automated fashion via REST services
- Interim Solution eliminates the need for WSSC to manually process MCDOT Data
- APC development continues and now overlays MCDOT projects and moratoriums onto WSSC projects



MCG-WSSC Data Sharing Coordination APC Development Phases

PHASE I – MAJOR AGENCY DATA SHARING

- Montgomery County DOT and DPS Moratorium, Paving Project, and Permits
- Maryland State Highway Administration Moratorium, Paving Projects, and Permits
- Maryland Transit Authority, Planned Major Projects
- Washington Suburban Sanitary Commission, Planned Water and Sewer Projects

PHASE II – DEVELOP & TEST COORDINATION TOOLS

- Establish Requirements, assumptions for no data, Data Colors, Consistent Field naming, etc.
- Project Conflict Analysis/Notification
- Reporting and Conflict Resolution

PHASE III – INTEGRATION OF MUNICIPALITIES & OTHER UTILITIES

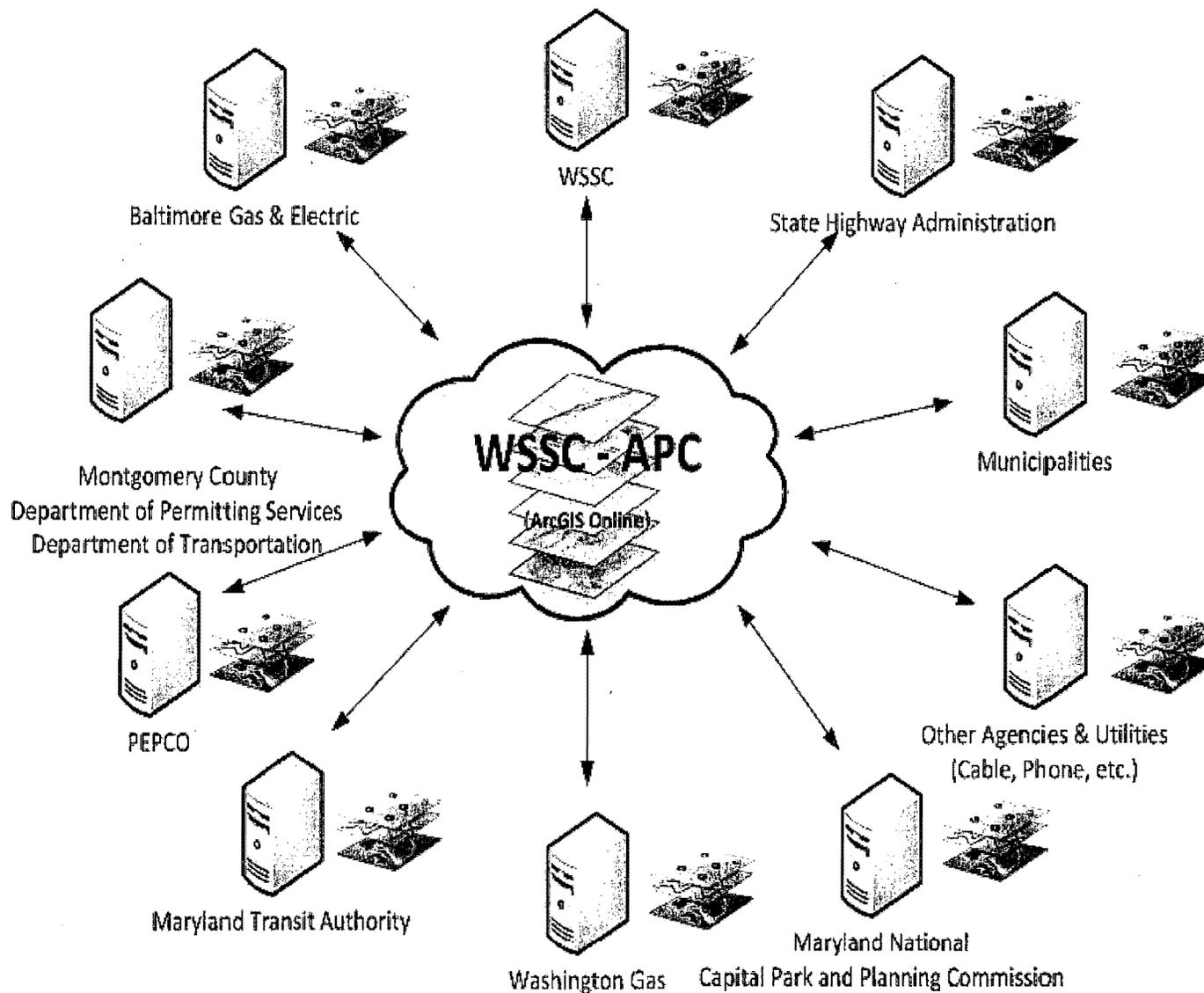
- City of Gaithersburg, Takoma Park, Town of Chevy Chase, etc.
- Washington Gas, Pepco, Verizon, etc.

PHASE IV – DEVELOP THE PUBLIC INTERFACE

- Integrate APC into Data Montgomery for Public Sharing

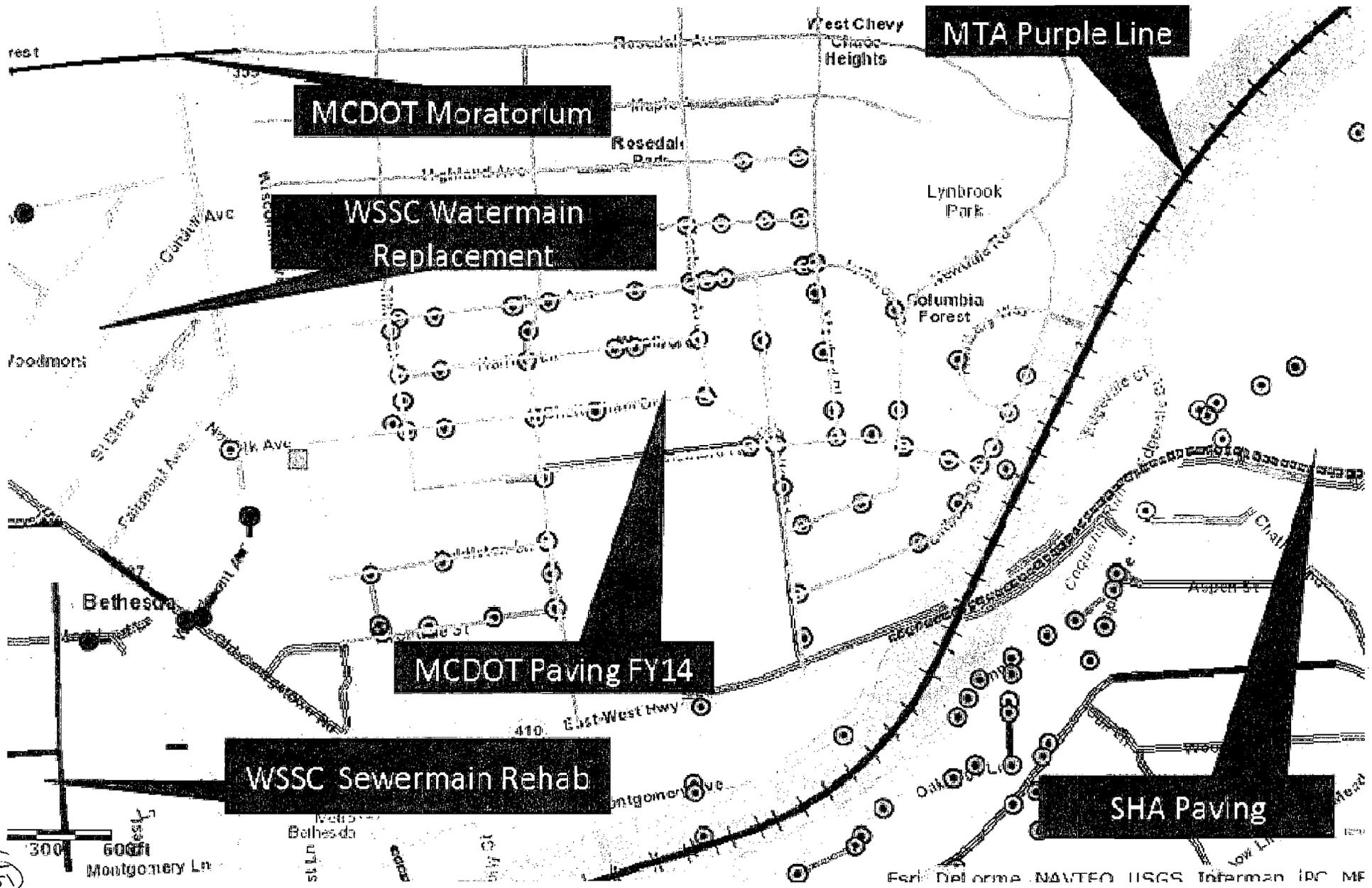


MCG-WSSC Data Sharing Coordination Agency Project Coordination Tool



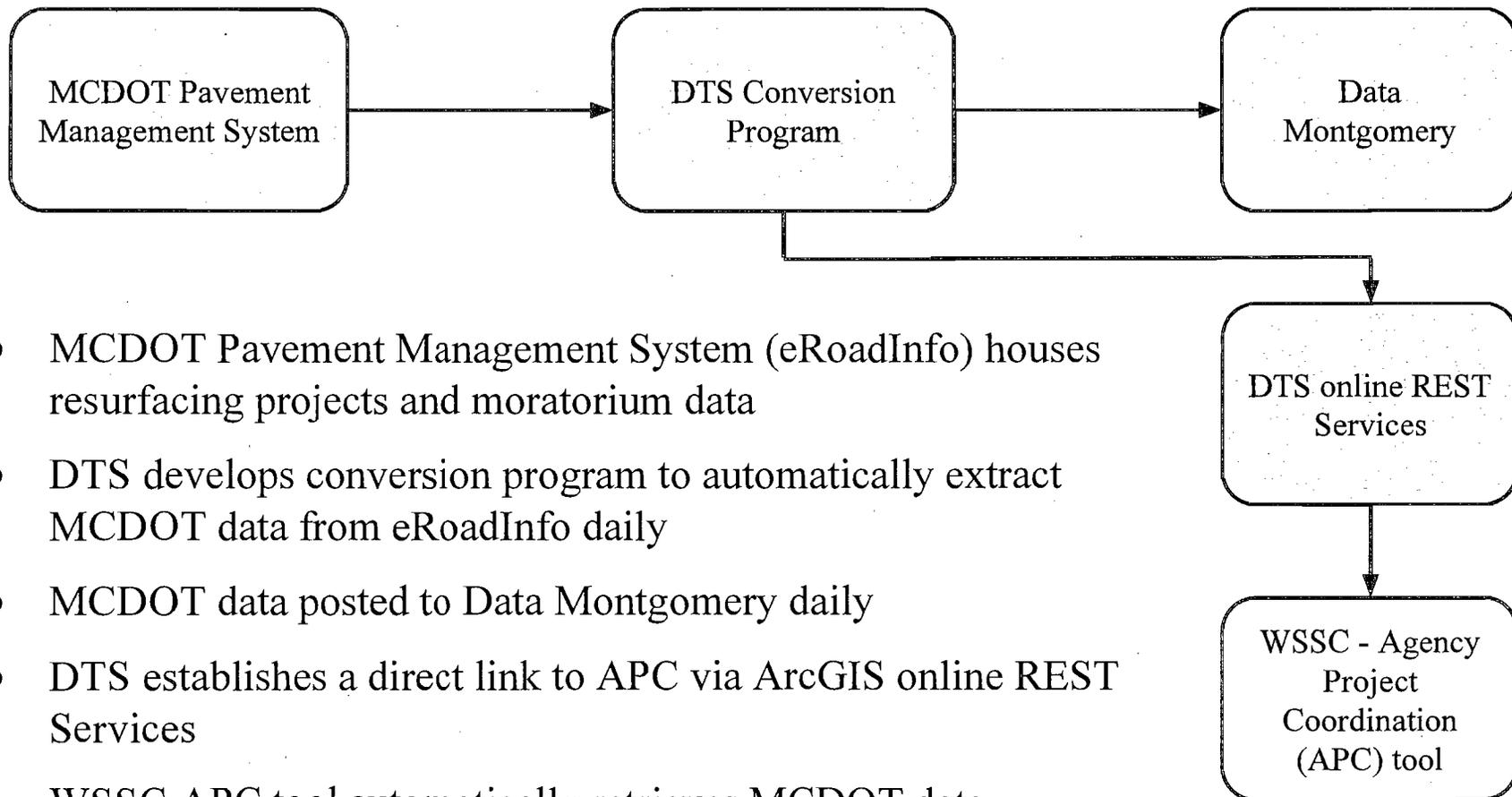


MCG-WSSC Data Sharing Coordination Sample APC Screen





MCG-WSSC Data Sharing Coordination Phase 1



- MCDOT Pavement Management System (eRoadInfo) houses resurfacing projects and moratorium data
- DTS develops conversion program to automatically extract MCDOT data from eRoadInfo daily
- MCDOT data posted to Data Montgomery daily
- DTS establishes a direct link to APC via ArcGIS online REST Services
- WSSC APC tool automatically retrieves MCDOT data



OLO Report 2013-5 Information Requested

2. Estimate development and maintenance costs for the standardized data set and application using in-house resources and/or a commercial product

- Although the County's development and maintenance costs of the Agency Project Coordination (APC) tool are yet to be defined, supplemental budget requests are not anticipated, as both the WSSC and Executive Branch (DTS; DOT; DPS) are leveraging existing tools, internal resources, processes already budgeted.
- Staff time savings are yet to be estimated and cannot be accurately determined until the tool is operational and functional. There is a potential that some staff time may increase as daily updates to DOT's eRoadinfo software program would be necessary for daily updates.



OLO Report 2013-5 Information Requested

3. Describe interagency agreements (e.g. memoranda of understanding, service level agreements) needed to standardize, integrate, and share data sets

- The WSSC and MCG are currently working cooperatively on an MOU that outlines the sharing, standardization and use of data sets.
- MCG may be required to enter into other MOU's with utility companies other than the WSSC to enable sharing and publishing data owned by those entities.



OLO Report 2013-5 Information Requested

4. Present a plan to develop an online tool to provide the public with consolidated information about right-of-way construction projects

- MCG will continue to work with WSSC to implement the APC tool being developed by WSSC, as described in this presentation.
- MCG will also develop a public facing application consistent with the County's open data initiative and condition(s) of MOU's with affected agencies and utility companies.



OLO Report 2013-5 Information Requested

5. Identify the relative priority of a right of way infrastructure data set compared to other items on the dataMontgomery implementation plan

- The APC tool is being developed in parallel with the dataMontgomery initiative.



OLO Report 2013-5 Information Requested

6. Include a recommendation from the Executive of whether the benefits of the system justify the estimated costs.

- The Executive supports the current approach of leveraging existing resources from both the WSSC and the Executive Branch to produce the APC tool.