Urban Stormwater Workgroup

Tuesday, March 17th, 2026
10:00 AM – 12:00 PM

Visit the meeting webpage for meeting materials and additional information.

Purpose: This is the monthly meeting of the Urban Stormwater Workgroup. Main topics included a presentation on an initiative to drive a broader adoption of power sweeper technologies to address stormwater pollution, a presentation from USGS on remote sensing of stormwater BMPs, and a presentation on the Phase 7 developed land use.

Summary of Actions and Decisions

- **Decision:** The USWG approved the February meeting minutes.
- **Action:** If you have any research or data to contribute to the Clean Streets = Cleaner Water Initiative or are interested in being a Steering or Supporting Committee member, please reach out to Seth Brown, Greg McPartlin, and Andrew Sheerin (seth.brown@nationalstormwateralliance.org, greg@urbanquarriesus.com, asheerin@fashomsolutions.dev). They will share public-facing information once the initial phase of the initiative is completed.
- **Action:** If you have any questions or comments on the USGS remote sensing of stormwater BMPs project, including what types of metrics would be useful to consider, please share them with Krissy Hopkins (khopkins@usgs.gov).
- **Action:** If you plan to review and provide comments on the Phase 7 land use time series, please share them with Sarah McDonald (smcdonald@usgs.gov) by **Friday, March 27**. When submitting feedback, please identify whether you are submitting (a) questions; (b) issues; or (c) errors. Please also share by March 27 if you need additional time and please indicate how much more time you need and for which jurisdiction. **Post meeting update:** All 197 counties are now complete and available on the web viewer.
- **Action:** Sarah McDonald and the CBPO Land Data Team will fix the bugs on the web map and alert USWG members when it is ready.

Minutes

I. Welcome and Announcements

Lead: David Wood, USWG Coordinator
David welcomed meeting participants, gave an overview of today's meeting and shared announcements.

- CSN is hosting a Winter Webinar Series on upcoming Tuesdays at 12pm.

Decisions:

1. The USWG approved the February 2026 USWG Meeting Minutes.

II. Introduction to Clean Streets = Cleaner Water Initiative

Lead: Seth Brown (National Municipal Stormwater Alliance), Greg McPartlin (Urban Quarries), Andrew Sheerin (Fathom Solutions), and Alex Reed (Washington Co., MD)

Seth gave an overview of NMSA and the Clean Streets = Cleaner Water Initiative, which aims to gather and align research and policy to drive a broader adoption of power sweeper technologies to address stormwater pollution. The motivation, vision, partners and current progress are outlined on the posted slides. They are currently in Phase I of the project - compiling data - and are working on a Strategic Framework which is set to be completed by May 2026.

Alex provided insight from Washington Co., MD as a case study, where they have found their adoption of broader street sweeping practices effective. Alex emphasized it is cost effective relative to other BMPs and can provide very tangible impacts visible to the public, which can lead to support for implementing other practices. He also noted they have implemented more street sweeping in more rural areas and they'd love to see that happening in other decentralized jurisdictions. Alex noted the limitation of only being able to report miles swept for credit.

Materials: Presentation

Actions:

1. If you have any research or data to contribute to the Clean Streets = Cleaner Water Initiative or are interested in being a Steering or Supporting Committee member, please reach out to Seth Brown, Greg McPartlin, and Andrew Sheerin (seth.brown@nationalstormwateralliance.org, greg@urbanquarriesus.com, asheerin@fashomsolutions.dev). They will share public-facing information once the initial phase of the initiative is completed.

Discussion:

- Kevin DuBois, DOW noted the challenge that the cost of these practices is not just of the sweepers themselves, but maintaining buildings to house them and repair crews to fix them. They are trying to explore, in areas like Norfolk, ways to collaborate on street sweeping to share equipment to reduce these costs.
    - Kevin shared that there is an Inter-governmental Support Agreement (IGSA) which allows Department of War to cost-share with adjacent municipalities for things they both utilize. Resources: IGSA Fact Sheet, More Info
- KC Filippino, HRPDC asked if in addition to asking for steering committee members, are they still looking for data. Are they partnering with universities working on this?
    - Seth responded yes, please share data with them. They're collecting a lot, but trying to compile and make sure it's being seen.
- Greg McPartlin shared they are trying to work with all thought-leaders. There's an opportunity now given where we're at with technology. They're trying to leverage that, not reinvent the wheel, and come up with solutions related to performance and quantification. Pivoting the discussion to water quality can leverage money towards this.
- Andrew Sheerin shared perspective from the modeling and data side of this work. They are trying to represent street sweeping in the International BMP Database. Most models are designed to be research tools, so they are working on developing these models to plug into municipality operations and help them track their programs and reductions to come up with metrics they need to get the credits they deserve.

- Marty Hurd, Fairfax Co., VA asked (in chat): Follow-up questions for CleanStreets=CleanWater. During the presentation, it sounded like some of the sweeper work was clean-up associated with road projects (?). Would those be considered part of SOPs (or mitigation) vs going beyond responsible disturbance projects? For which pollutants does the initiative expect to research removal rates? Sediment, trash/litter/microplastics, metals, nutrients, construction debris, other? Sweeping is certainly good housekeeping, is in the public eye, and does get material out of MS4 discharges. I could see this work benefiting local TMDL action plans for applicable pollutants.
    - Andrew Sheerin responded (in chat): We would certainly prioritize street sweeping near roadside construction projects, but we would go beyond that and focus on hotspot accumulation areas depending on land use, tree coverage, traffic, and season. Our research is focused on sediment, nutrients, heavy metals, microplastics, and emerging contaminants (PFAS, PAHs).

III. Stormwater BMP Remote Sensing Project

Lead: Krissy Hopkins, USGS

Krissy gave an overview of a USGS project to develop an artificial intelligence / machine learning (AI/ML) deep learning model to remotely map surface stormwater facilities in the Piedmont ecoregion of the Chesapeake Bay watershed. A pilot site in Little Seneca Creek in Montgomery Co., MD was used to test out the method, which starting by hand digitizing stormwater features in the study area to use as a reference to test a combination of landscape metrics to predict where these different features will be. For roadside swales, the best metric was topographic openness. For ponds, a combination of landscape topographic openness and the probability of a landscape depression were the best combination of metrics.

Krissy noted the limitations of current databases, CAST and remote mapping, for consideration, and shared preliminary model outputs for an example neighborhood. Next steps include expanding the pilot to 2 more counties, translating the measures into metrics like surface water storage per impervious area or proportion of roadways lined with swales, and exploring if this can be used to support maintenance by assessing changes in vegetation and water ponding. In 2027, they expect to publish a journal article on the methods and integrate the metrics into the Stream Team Urban Typology Study.

Materials: Presentation, Project Page

Actions:

1. If you have any questions or comments on the USGS remote sensing of stormwater BMPs project, including what types of metrics would be useful to consider, please share them with Krissy Hopkins (khopkins@usgs.gov).

Discussion:

- Marty Hurd asked to be connected to help with their work as they are trying to do a further pilot study in Fairfax Co., VA.
- KC Filippino asked about the applicability of this in other geographies, like coastal plain, and if other ancillary data would be need for it.
    - Krissy responded that the model is over-estimating bioretention and sand filters. The value is less for predicting the exact storage volume, but rather for ranking the facilities relative to each other. The size of the facility generally leads to larger storage, but not always since we don't know what's going on below

surface. That's one limitation. Any new facilities that have as-built information to be added to these datasets is really helpful.

- Cecilia Lane, DC DOEE noted (in chat): I wonder if anyone is collecting sediment data from GSI Maintenance teams (re: inlet cleaning) and if there is any opportunity to correlate with street sweeping data. Similarly, catch basin cleaning programs.
- Matt Williard, PADEP asked (in chat): How do you know that the BMP you are assuming you are looking at is what is actually in the ground? For instance, you may be referencing something as a Wet Pond based on standing water; however, it is actually an Infiltration Basin that is not functioning properly.
    - Krissy responded that for the pilot studies they have information on the type of BMP that should exist, so they can compare and test the performance of the model and develop the model to better predict the facility type correctly. The precision and recall metrics shown earlier reflect that level of agreement.

IV. Phase 7 Developed Land Use Overview

Lead: Sarah McDonald, USGS

While the Phase 7 land use time series (1985-2021/22) review period is going on, Sarah presented to USWG on the time series data. The time series/back-cast is 1-meter resolution data used to deconstruct the landscape back through time to 1) set appropriate TMDL allocations, 2) estimate spatially explicit loading rates, and 3) use as inputs in CAST scenarios. Sarah gave background on the different land use products, outlined what is available on the web mapper for review, and highlighted example counties from each jurisdiction. Comparing Phase 6 and Phase 7 for the developed sector, Sarah noted that Phase 7 shows less developed land use on average than Phase 6, potentially due to improved mapping of turf grass in the most recent high-res Land Use/Land Cover. Finally, Sarah outlined the timeline and instructions for the review process.

Materials: Presentation, Web Mapper, Additional Resources

Actions:

1. If you plan to review and provide comments on the Phase 7 land use time series, please share them with Sarah McDonald (smcdonald@usgs.gov) by **Friday, March 27**. When submitting feedback, please identify whether you are submitting (a) questions; (b) issues; or (c) errors. Please also share by March 27 if you need additional time and please indicate how much more time you need and for which jurisdiction. **Post meeting update:** All 197 counties are now complete and available on the web viewer.
2. Sarah McDonald and the CBPO Land Data Team will fix the bugs on the web map and alert USWG members when it is ready.

Discussion:

- Marel King, CBC asked (in chat): If there is less developed land in Ph 7 v Ph 6, what land use is making-up the difference? Is there now more ag in Ph 7 compared to Ph 6? Mixed open??
    - KC Filippino responded (in chat): There's no more mixed open. It's mostly being reclassified as natural. But it's not that simple because the loads still have to go somewhere. Not sure if they'd be reallocated to natural or stay in developed.
    - Sarah responded that it varies by county, but regionally we are seeing more natural land and less developed and ag, likely largely driven by the usage of census of ag data in Phase 6. In Phase 6, the mapped acres and census of ag acres were averaged, which often ended up reducing the developed and natural footprints. There is more detail in the office hours recording.

- Multiple members noted issues with the web mapper, including showing three versions of the same county and/or not being able to download the PDF report.
- Marty Hurd, Fairfax Co., VA noted (in chat): I looked at the data from the viewer from Fairfax County. It looks like the P7 data addressed or smoothed some abrupt corrections in the P6 data (in 1993 and 2012).
    - Sarah responded that Phase 6 was heavily driven by census of ag which is every ~5 years. In the reports, those years are highlighted so you can see when those jumps line up with the census. Hopefully the charts in Phase 7 are smoother on a year-to-year basis.
    - Cassie Davis, NYSDEC noted that for Cortland County, where it shows the ag census, it's still showing large jumps, but the scale is much smaller in Phase 7.
    - Sarah responded yes, in general the magnitude of change that we're seeing is much smaller in Phase 7 compared to Phase 6.
- Marty noted that developed versus natural don't always line up with how jurisdictions have their data, so you really have to dig to underscore some of the discrepancies.
    - Sarah responded they can try to help with that by providing better metadata and explanations alongside the data.
- Marty asked why the time series ends in 2022. What about current and future model land use during this review too?
    - Sarah responded that 2022 is the most recent high-res product we have. Chesapeake Conservancy has a cooperative agreement to develop a 2025/26 high-res map, but that is not ready yet.
    - Marty asked how the future land cover data is mapped to this landsat-based review data.
    - Sarah responded that the forecast will be based on the 2022 maps with predicted land conversions to account for estimated job, population and other growth. These won't be reviewed in the same way because it is predictions, not monitored data.
    - Samuel Canfield, WVDEP asked (in chat): Could Compacted Pervious and Construction being included in Natural rather Development also drive the P6 vs p7 difference?
        - Sarah responded that the comparison plots were intended to be "apples to apples" comparisons, so the Phase 7 data is on par with the Phase 6 rollups under each sector. For the Phase 7 plots shown later in the slides, those are aggregated appropriately with the Phase 7 sectors.

V. Wrap-Up
Lead: Petra Baldwin, USWG Staffer

VI. Adjourn

Next Meeting: Tuesday, April 21, 2026

Attendees:

Norm Goulet, NVRC (USWG Chair)
KC Filippino, HRPDC (USWG Vice-Chair)
David Wood, CSN (USWG Coordinator)
Petra Baldwin, CRC (USWG Staffer)
Seth Brown, NMSA
Greg McPartlin, Urban Quarries
Alex Reed, Washington Co. Md
Andrew Sheerin, Fathom Solutions
Krissy Hopkins, USGS
Sarah McDonald, USGS
Elaine Webb, DNREC
Bonnie Arvay, DNREC
Cecilia Lane, DC DOEE
Andrea Krug, DC DOEE
Sophia Grossweiler, MDE
Gillian Adkins, MDE
Cassie Davis, NYS DEC
Tyler Trostle, PA DEP
Owen Dingman, VADEQ
Samuel Canfield, WVDEP
Marel King, CBC
Auston Smith, EPA
Heather Gewandter, City of Rockville
Greg Hoffmann, CWP
Jeff Colella, WVSA
Ginny Snead, AMT Engineering
Camille Liebnitzky, City of Alexandria
Travis Ostrom, EPA
Rebecca Ransom, USGS
Nick Santoro, USGS
Marina Metes, USGS
Michele Berry, CSN
Jeremy Hanson, CRC
Alex Gunnerson, CBPO Contractor
Jackie Pickford, USGS
Marel King, CBC
Jamie Eberl, PADEP
Denise Uzupis, PADEP
Matthew Williard, PADEP
Bruce Naylor, PADEP
Cass Klingaman, NYS DEC
Sabine Miller, DC DOEE
Samantha Cotten, DNREC
Devon Kosisky, MDE
Joe Parfitt, VDOT
Scott Crafton, VDOT
Krista Romita Grocholski, RAND
Justin Lindemeyer, VA DCR
Martin Hurd, Fairfax Co., VA
Kevin DuBois, DoW
Angela Jones, DoW
Eugenia Hart, TetraTech
Sushanth Gupta, MWCOG
Allie Wagner, NVRC
Ho-Ching Fong, MoCo DEP
Mark Symborski, MoCo Planning
Nathan Forand, Baltimore Co. Md
Brenda Morgan
Ashley Hall, Stantec
Robert Holdridge, Pro Sweep
Jamus Lapczynski, Pro Sweep
Michael Lucht, Pro Sweep
David Heigl, Schwarze Industries
Daniel Federico, Schwarze Industries
Corey Mozey, Schwarze Industries
Nicholas Bruhn, Schwarze Industries
Joe Hendrickson, Alamo Group
T Gardner, Atlantic Machinery Inc.