

**Douglas Park Civic Association Meeting - June 18, 2013  
Summary of Questions and Responses  
16<sup>th</sup> St S Green Street project**

**Question: Pervious concrete has not been used in Arlington. Why is an experimental pavement being used for the sidewalk in front of our homes?**

Pervious concrete is not experimental and is being used throughout the country, the state and in the Washington, DC region to decrease stormwater impacts on our water resources.

The U.S. EPA has installed pervious concrete sidewalks in the courtyard of their Constitution Ave building downtown (<http://www.rte50.com/2007/05/in-their-own-ba.html>). Washington, DC has instituted a Green Alleys initiative (<http://dc.gov/DC/DDOT/Projects+and+Planning/Environment/Green+Alley+Projects>). Montgomery County has completed numerous pervious pavement projects including at the White Oak Community Center.

Numerous private driveways in Arlington are now constructed of pervious concrete. Staff is willing to provide addresses of these properties upon request. Viewing of the pervious concrete installed on private property must be from the public sidewalk or street.

**Question: Why doesn't the County start with a pervious concrete sidewalk demonstration project on a public property?**

All of the project aspects with regards to the 16<sup>th</sup> Street South Green Street are on public property, in the public right-of-way. Residents are correct that Arlington has not previously constructed pervious concrete sidewalks. However, evidence we have from both private and public projects throughout the region indicates that pervious concrete can be successfully installed and maintained and is a viable surface for both pedestrian and vehicle applications. The County understands the value of demonstration projects and heard residents' suggestion that a demonstration be installed as a trial project before the 16<sup>th</sup> Street S pervious sidewalk and parking area is constructed.

**Question: Will the pervious concrete add to our drainage problems?**

The pervious concrete sidewalk will not add to the drainage issues on the residential lots. The pervious pavement sidewalk and pervious parking area included in the 16<sup>th</sup> Street S Green Street project will be constructed within the public right-of-way. The underlying layer of gravel for the pervious sidewalk will be hydrologically connected to the gravel layer in the base of the rain garden and beneath the pervious pavement parking area. Rain falling on the pervious sidewalk or runoff flowing onto the sidewalk will percolate through the sidewalk

into the gravel layer and then into the gravel layer within the rain garden. Some runoff may also flow across the sidewalk towards the street as it does currently.

Although our maintenance program for the pervious pavement should prevent the sidewalk from clogging, if the sidewalk does become clogged it will not result in a drainage concern on the residential lots. The pervious sidewalk will function just as the current conventional concrete sidewalk does.

**Question: We are worried about maintenance of the pervious concrete. Is maintaining the pervious concrete four times per year sufficient? What happens if the pervious concrete does clog? Would you consider increasing the frequency of maintenance?**

The Virginia state standard for pervious concrete indicates that maintenance should occur annually. However, best practice is semi-annual maintenance. The pervious concrete installed as part of the 16<sup>th</sup> Street S project will be maintained four times per year. Quarterly maintenance should ensure that the pervious sidewalk and pervious parking area continue to allow water to pass through the pavement.

It is unlikely that the entire pervious concrete surface would become clogged. Generally, if clogging occurs it is localized. Clogging of small portions of the pervious concrete is tolerable because the water can infiltrate through the adjacent pavement areas. If clogging becomes pervasive and compromises the ability of the pervious sidewalk to treat stormwater, County staff would investigate the cause of the clogging and respond appropriately. More frequent maintenance would be performed if it was necessary. The County would also consider repair if appropriate. It is possible to repair pervious concrete by removing and replacing sections of the surface.

Large-scale failure of pervious pavement is most often due to improper installation. Failure of the pervious asphalt at Langston-Brown Community Center resulted from improper installation, not poor maintenance. To ensure that the pervious concrete is installed properly the County will use a National Ready Mixed Concrete Association-certified Master Craftsman, an installer with the highest possible certification for pervious concrete installation, for its projects.

**Question: Why does street sweeping occur six times per year and maintenance of pervious concrete only four times per year?**

Street sweeping and the pervious pavement vacuuming serve two very different purposes. The street sweeping removes debris on the surface that accumulates along the curblin. The sidewalk vacuuming will remove surface debris as well, but is designed to pull particles from the pores of the pervious material. The pervious concrete parking area will be both swept and vacuumed, and thus

would be maintained a total of 10 times (6 times from street sweeping and 4 times from vacuuming) a year per the current plan.

**Questions: Will plants grow through the pervious concrete? What do we do in the winter? Is there a concern about increased icing?**

Plants will not grow through the pervious concrete. The pore spaces are not large enough to let plants grow through the pavement and with quarterly maintenance there will not be enough debris or sediment accumulating on the pavement to support plants.

Salts and other chemical deicers may be applied to the sidewalk to prevent icing. Salt can have negative impacts on water quality. Potassium acetate or calcium magnesium acetate deicers are preferable. The County hopes that this information will help residents choose a more environmentally-friendly deicer. Sand or kitty litter is not recommended as they can clog the pervious concrete. Construction or landscaping materials such as mulch should also not be stockpiled on the sidewalk.

Because of the air spaces in the pervious sidewalk, snow and ice tend to melt faster and accumulate less quickly on pervious concrete. An exception to this is in the late fall/early winter when the ground is still warm, but the air is very cold. During this time frame, snow or ice may accumulate on the pervious concrete more readily than on the adjacent ground.

**Question: Can you explain why this project is being designed and constructed before others in the Doctor's Branch watershed?**

The 16<sup>th</sup> Street S Green Street project was identified during a County-wide study that identified opportunities for new stormwater projects. Projects were ranked based on their potential water quality benefits. The 16<sup>th</sup> Street S Green Street project ranks among the top 10 percent of all identified stormwater retrofit projects County-wide, and 11 (out of 71 projects) in the Doctor's Branch Watershed Retrofit Plan (<http://www.arlingtonva.us/departments/EnvironmentalServices/Sustainability/page83243.aspx>). The project has significant benefits for our water resources, including our local streams, the Potomac River and the Chesapeake Bay. It will remove pollutants from stormwater runoff flowing from over 4 total acres, and 1.8 acres of hard surfaces, including rooftops, driveways, sidewalks, and roadway. This ranking system was created by the Center for Watershed Protection based on potential water quality benefits and does not take into consideration potential project construction efficiencies that provide good opportunities for coordination.

The County-wide rankings do not create a specific implementation order, but rather guide the County in its choices. The County wants to implement stormwater projects that provide the most water quality benefits for the least cost.

Impacts to residents are also considered to be a cost. The County seeks to minimize potential negative impacts to residents and examines potential parking and construction impacts in its decisions.

Another project within the Doctor's Branch watershed, the 8<sup>th</sup> Street South Green Street, which ranked 12 out of 71 projects, is anticipated to go to construction this summer. This project corresponded with a Neighborhood Conservation Project on 8<sup>th</sup> Street S.

Unfortunately, several projects identified for the Doctor's Branch watershed that are higher ranked are not able to be implemented. Several opportunities were removed by re-development. Other opportunities provide significant water quality benefits, but cannot be easily implemented because they are located on private property. Still other opportunities are no longer viable due to previously unknown property uses or utility conflicts.

A list and information about Green Street projects under design is available on the Green Streets project page - <http://www.arlingtonva.us/departments/EnvironmentalServices/Sustainability/page81126.aspx>.

**Question: What are the benefits of coordinating design and construction of the Green Street and Neighborhood Traffic Calming projects? What construction impacts would result from separating the projects?**

The 16<sup>th</sup> St S Green Street project corresponds with a **Neighborhood Traffic Calming** project already under design. Designing and constructing the traffic calming and retrofit projects together provides some cost-saving opportunity for the County and its taxpayers and will limit construction impacts to residents. Construction of both projects will affect pedestrian and vehicle traffic patterns. Staff normally seeks to avoid repeated construction visits to the same block.

**Question: The Neighborhood Traffic Calming project is moving forward after a rigorous public process. How can the County justify adding the Green Street project to the scope?**

Staff acknowledges that the Green Street is not part of the proposal that was approved by the community through the Neighborhood Traffic Calming (NTC) process. The proposal to jointly design and construct the Neighborhood Traffic Calming and Green Street projects was discussed with Neighborhood Traffic Calming staff and the Neighborhood Traffic Calming Committee. Neighborhood Traffic Calming staff participated in the initial public meeting with adjacent homeowners in March 2012 and resident responses to the Green Street proposal at the time were largely positive. Moreover, the bioretention elements provide additional traffic calming, and thus are complementary to the traffic calming outcome desired by local residents. However, the County understands the need

to meet their original commitment on the NTC project and will move forward separately with the NTC and Green Street projects.

**Question: The Neighborhood Traffic Calming project has been delayed. Will the continuing coordination of this project with the Green Street project add to the delay?**

The County has decided to de-link the NTC and Green Street projects so the NTC project can get to construction as soon as possible. The Neighborhood Traffic Calming project was not ready for construction in March 2012 when discussions about the Green Street project began with the community. The delay since then is not desirable, but we did learn a lot from the public involvement and design processes that will inform future projects and process.

It is clear that the Douglas Park community still has many questions about the Green Street project, and the County wants to take the time to get it right with the stakeholders associated with each of the first Green Street curbside projects.

**Question: Has the County evaluated Monroe Street between 14<sup>th</sup> and 16<sup>th</sup> Streets S for a Green Street project?**

Yes, the Center for Watershed Protection worked with the County to evaluate Monroe St between 14<sup>th</sup> and 16<sup>th</sup> Streets S. The Center identified a Green Street project on the east side of Monroe Street just north of the intersection with 14<sup>th</sup> Street S and adjacent to Monroe Park. Another project was identified on 15<sup>th</sup> Street S at the intersection with Monroe Street. The 16<sup>th</sup> Street S Green Street project would provide greater water quality benefits than either of these projects.

**Question: Will the Green Street project add to drainage concerns for private property owners?**

The Green Street project will not add to existing drainage issues on private property. However, state law also limits the capacity of the County to improve private property to solve private drainage issues.

Staff is aware that several residents have installed pipes through the existing sidewalk that allow drainage from their properties to more easily flow into the street. This work has been done in an effort to reduce standing water and drainage issues on their properties. Any project that repaired or replaced the existing sidewalk would need to accommodate this existing private drainage infrastructure. The Green Street project will as well. Additionally, if neighbors working together complete drainage work in advance of the Green Street project construction, we will accommodate that drainage work with the project. An advantage of the Green Street project is that we will be digging down below the current curb and drainage pipes may be able to outlet at a lower elevation than

they otherwise could. In other words, the Green Street project may provide residents with the opportunity to improve their current private drainage systems.

Staff request that residents notify them regarding pipe or drainage connections to the street, or intended drainage projects.

**Question: What about wet basements?**

The County considers possible negative drainage impacts as part of its decision-marking process for pursuing stormwater projects. The rain gardens that would be installed with this project are not likely to result in any wet basement concerns for residents.

Most wet basement issues are related to surface water drainage problems. However, to minimize the likelihood of bioretention or rain gardens projects negatively impacting foundations or basements, the state specification for bioretention recommends that a distance of 10 feet be maintained between any foundations and a rain garden. All of the rain gardens constructed as part of the 16<sup>th</sup> St S Green Street project will be located more than 10 feet from the private residences. The rain gardens will also be downslope of the properties.

In the limited situations where wet basements are a possible result, an impermeable liner can be added to the rain garden to prevent water from seeping towards a foundation or basement.

**Question: What are the parking impacts and how has the County responded?**

Staff has responded to residents' concerns regarding parking by modifying the Green Street project design. The modification replaced a proposed bioretention/rain garden with a pervious parking area. This modification restored three parking spaces on the north side of 16<sup>th</sup> Street S that were initially proposed for removal.

Within the project area, all homes have driveways. The project also retains twelve on-street parking spaces within the 3700 block of 16<sup>th</sup> Street S - two on-street parking spots per dwelling for residences with a single frontage.

Altogether, the project will remove 10 total parking spaces distributed over three blocks.

**Question: Can the 3700 block of 16<sup>th</sup> Street S qualify for residential permit parking?**

The project area is currently not zoned for residential permit parking and would not likely qualify given the current criteria for non-resident vehicle traffic. In any case, the design will seek to retain adequate residential parking on the block.

**Question: Some properties in the community are rooming houses and often use more than two on-street parking spaces. Does the County understand this and how will the County address this concern?**

The County is aware that some residents are concerned about the number of inhabitants in neighboring households. This issue may be related to larger challenges within the County such as affordable housing and economic development. The County will continue to address these issues, but is not likely to resolve them in conjunction with the 16<sup>th</sup> Street S Green Street project.

DES staff have contacted leadership in Zoning to follow up with the code enforcement concerns of the neighborhood.

Staff have visited the street at multiple times of day have not observed that there is a lack of parking. Since each home has a driveway and two on-street parking spaces are being provided for each dwelling, the County considers the amount of on-street parking provided to be sufficient for all residences in the 3700 block of 16<sup>th</sup> Street S.

**Question: Who will maintain the Green Street rain gardens and pervious pavement? How can we be sure maintenance will take place? What happens during tight budget years?**

Unlike the traffic circles, which rely on residents for a portion of their maintenance, the installed project will be part of the County's stormwater infrastructure. The biological and structural components of the Green Street project will be maintained by the County much as the County maintains its sanitary sewer, water and storm sewer systems.

If the County fails to maintain the Green Street facilities, it will not receive credit for the pollutant reductions that are the objective of the project. In other words, the project will be maintained, because the County is required by both state and federal regulations to do so. For this reason, maintenance costs are a component of our annual budget and planning. Sufficient funding for maintenance of Green Street facilities is not optional.

The sanitary district tax provides a dedicated funding source for stormwater system improvements. The current sanitary district tax rate is \$0.013 per \$100 of assessed value and is included in the real estate tax. This dedicated funding

source provides some level of confidence for stormwater maintenance during challenging budget periods.

**Question: What is the maintenance schedule and what does maintenance entail?**

Maintenance for each Green Street occurs quarterly. However, staff also inspects the Green Street after major storms, particularly during the first several months following installation.

Quarterly maintenance for the rain gardens includes the following:

- Remove sediment
- Weed, inspect, replant, cut back, and prune plants
- Remove trash
- Make sure underdrain, overflow, all pipes, erosion protection and catch basins are working correctly

The pervious pavement will be vacuumed quarterly to keep pore spaces clear of sediment and other debris.

**Question: Residents are concerned about weeds in the rain gardens during the growing season. Can the rain gardens be maintained more than four times a year to reduce the number of weeds?**

Staff is willing to increase the maintenance frequency for the rain gardens to 5x/year for the first two years. After that the vegetation should grow in and reduce the need for more than quarterly maintenance. If weeds become an issue after the first two years, the County is willing to consider re-instituting the 5x/year maintenance schedule. To better involve community members who want to help achieve stormwater goals, the County may also introduce an Adopt-a-Green-Street or similar volunteer initiative to assist with weeding and care of the plants.

**Question: What about solid waste bulk pick-up?**

For bulk pick-up, residents have the option to coordinate with neighbors, use their driveway apron, or use adjacent grass areas. In response to queries regarding this issue, the County will make necessary operational changes to accommodate solid waste bulk pick-up in conjunction with Green Street projects. This may require some minor adjustments to our current bulk pick-up operations and procedures, and we will communicate those changes to residents.

**Question: Why isn't the County addressing paving and additions that add impervious cover on private property if stormwater is such a concern?**

The stormwater impacts the County is trying to address through its Green Streets program are the result of multiple years of development from the 1950s through the 1970s. During this period, no stormwater regulations existed. Despite this we



are concerned about the incremental additions to impervious cover resulting from work on residential properties.

The County does have stormwater management requirements (under its Chesapeake Bay Preservation Ordinance) for development projects associated with land disturbance that exceeds 2500 square feet, a threshold set by the State.

In addition, the County supports the StormwaterWise Landscapes Program (<http://www.arlingtonva.us/departments/EnvironmentalServices/sustainability/page83039.aspx>), which offers incentives to homeowners interested in reducing the stormwater impacts of their private hardscape and rooftops.

Unpermitted building activities should be reported to Code Enforcement at 703-228-3232. However, in most cases, these projects can continue once the appropriate permits have been received. Paving that is not associated with vehicular use (driveways and parking pads) is not counted as lot coverage under the Zoning Ordinance. In addition, paving of any kind does not require a permit from DES unless it will disturb over 2500 square feet. Reports of unpermitted disturbance that appears to be 2500 square feet or greater may be made to Development Services at 703-228-3629.

**Question: How will the County know if the Green Street project is successful?**

The quarterly maintenance inspections, and additional inspections by County staff following storms, ensure that the Green Street is functioning as designed. As long as water is entering and draining through the rain gardens, the plants are healthy and well-established, erosion isn't occurring and the pervious pavement remains largely un-clogged, the Green Street is considered to be successful. Where issues in these areas are identified, they will be corrected to ensure the project's continuing success.

Green streets facilities will be designed, constructed, and maintained in accordance with State-adopted specifications. These specifications derive from research and monitoring studies, and following them is assumed to provide a certain level of performance. For this reason, the County is able to calculate and receive quantitative pollution removal credit for each Green Street facility to apply to our regulatory requirements.