

Memorandum

To: Zoning Committee of the Planning Commission (ZOCO) **Date:** January 12, 2023

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Subject: Zoning Ordinance Amendment – Stormwater Management Facilities and Public Space Features

Executive Summary

Due to limitations in Arlington’s zoning standards, stormwater management facilities can not be established on public lands, such as parks and schools, that are zoned S-3A. The County’s setback requirements can unreasonably restrict the location of above-ground structures for stormwater management facilities on a particular lot. Amendments to address these limitations meet several adopted policy goals, while furthering the implementation of the Flood Resilient Arlington initiative.

The County’s setback requirements also restrict and reduce the potential area that can be used for amenities and features in a public space, such as a park, plaza, or recreational facility. Flexibility that allows seating, play equipment, pedestrian lights, and similar features commonly found in public spaces within a street setback aligns with the goals and objectives of the 2019 Public Spaces Master Plan.

To address these needs, staff has developed draft zoning text for the Zoning Committee’s consideration, enclosed as Attachment 1.

Background

Stormwater Management Facilities: The Department of Environmental Services (DES) has begun preliminary design and feasibility work on a series of capital improvement projects focused on stormwater management (SWM) and delivering solutions meeting more current, modernized methods. The projects would address the increasingly urgent need to reduce flooding risks in light of progressively intense rain storms (Figure 1) that have become more frequent in recent years. These storms have severely impacted a wide swath of County



Figure 1: Flooding in Arlington from the July 8, 2019 storm
(Source: [Nicole Bender via ARLNow.com](#))

residents due to capacity issues in Arlington’s existing SWM system, as well as overall development patterns which pre-date modern-day flood mitigation standards. Flooding from these storms has been exacerbated by limited opportunities for safe overflow paths for water to follow during heavy rainfall when SWM pipes reach capacity, otherwise known as overland relief.

To date, DES has worked with community stakeholders to highlight the need for a more resilient SWM system as part of the [Flood Resilient Arlington](#) initiative.

The general approach that DES intends to take is to establish one or more SWM facilities on public lands. These may include public schools or parks, and they may include lots acquired through [voluntary acquisition](#). Facilities would address SWM needs on a multi-acre, neighborhood-level scale, providing greater safety for the broader population as opposed to serving individual lots. Examples of the types of SWM facilities to be used, sometimes in combination with one another, would include the following:

- Above-ground **detention ponds**, designed for temporary water storage (“dry ponds”) or continuous water storage (“wet ponds”)
- **Flood walls**, designed to temporarily contain and safely convey stormwater runoff away from buildings and other areas of interest
- **Overland relief measures**, which are dedicated, above-ground channels lined with grasses that flood waters will use when the underground stormwater conveyance system of pipes is inundated during a severe rain storm
- **Underground detention vaults**, consisting of concrete or plastic chambers that act as a reservoir to temporarily collect, hold, and release stormwater runoff at a lower rate to reduce downstream flooding and erosion
 - In instances where the vault needs to be constructed at a depth where natural, gravity discharge is impractical, an underground vault may use auxiliary hydraulic **pumps**, with a backup **generator** enclosed within an accessory building, to lift the water to the conveyance system for discharge

Staff has enclosed an illustrative guide in Attachment 2 that graphically identifies each of the types of SWM facilities highlighted above.

Zoning Regulations for Stormwater Management: Article 18 of the ACZO (Definitions) does not include a definition for *stormwater management facility*. Such facilities are referenced in Article 12 (Use Standards), specifically within the public, civic and institutional use categories specified in [§12.2.4.K \(Utilities\)](#). The ACZO distinguishes utilities into two broad categories (terms commonly associated with stormwater management identified in **bold**):

- Minor utilities include **lift stations**; public transit facilities, including bus shelters, bike share stations; stormwater retention and detention facilities; traction power stations; and **water and wastewater pump stations**.
- Major utilities include electrical generating plants and substations; electrical transmission facilities; incinerators; **stormwater pumping station**; telephone exchanges; television

and radio broadcasting transmitters; static transformer stations; commercial and public utility radio towers; water and wastewater treatment plants; water storage facilities; railroads and railroad right-of-way and tracks.

Although major and minor utilities are similarly not defined, these terms are utilized in the ACZO’s use tables to determine whether a particular land use is permitted within a given zone.

Overall, major utilities with some exceptions generally require County Board use permit approval to be established in a Residential (R), Multiple-family (RA), and Commercial/Mixed Use (C) districts, with minor utilities permitted as a by-right use except for bus shelters and bike share stations. In Industrial (M) districts, only selected major utilities uses are permitted, while all minor utilities and wastewater pump stations are permitted by-right and bus shelters and bike share stations requiring County Board use permit approval.

Utilities are permitted with marked differences in the Public (P) districts use table for the S-3A - Special District, S-D - Special Development District, and P-S - Public Service District:

- While major utilities can be established in S-3A and P-S with County Board use permit approval, minor utilities are not listed in the Public districts use table except for bus shelters, bike share stations, and pump stations for water or wastewater. Since minor utilities are absent from this use table, they are prohibited and cannot be established in the three Public districts.
- Pump stations are prohibited in S-3A, but permitted by-right in P-S.
- No major or minor utilities are permitted in the S-D district.

The ACZO regulates the location of SWM facilities on a lot, requiring above-ground structures to meet setback requirements from streets, side lot lines and rear lot lines. These above-ground structures can include accessory buildings that enclose pumps and emergency generators, pole-mounted monitoring equipment, and outfall structures equipped with “trash racks” to prevent large debris from entering the SWM system. These types of structures must be located outside of the required setback.

The ACZO defines structures as “[a]nything constructed or erected that requires location on the ground or attached to something having a location on the ground.” Table 1 outlines the setback requirements for structures in the S-3A district, which is the zoning district most frequently used for public schools and public parks:

Front yard setback	Whichever is greater: 50 ft. from the street centerline, or 25 ft. from the front lot line
Side and rear yard setback	<p><u>Structures below 25 ft. in height:</u> 10 ft.</p> <p><u>Structures above 25 ft. in height:</u> 10 ft., plus an additional 1 ft. setback for every 2.5 ft. in building height above 25 ft. or fraction thereof</p> <p><u>Interior lots, rear yard only:</u> 25 ft.</p>

The ACZO specifies several types of regulations in Article 3 (Density and Dimensional Standards) for the height and placement of fences, and these regulations apply regardless of an individual property's zoning district or land use. Fences associated with SWM facilities may be located within a required setback, but have maximum height and setback requirements based on their location:

- Fences at the corner of two intersecting streets must meet the visual clearance standards specified in §3.2.6.A.4, which prohibit fences from being located within 25' from the intersection to allow for clear sight lines for motorists making turns on to the street.
- Fences along street setbacks that are public rights-of-way can be no closer than three feet from the lot line.
- Along front yard lot lines and within the front yard setback, fences have a maximum height of four feet.
- For side and rear yards:
 - Fences may have a maximum height of up to seven feet along side and rear lot lines, up to the required front setback line.
 - On corner lots, fences may have a maximum height of six feet within the required side and rear yard setbacks, and outside the required front yard setback.

To assist with understanding these maximum fence requirements, staff has enclosed a reference diagram used by CPHD's Zoning Division for administration purposes in Attachment 3.

Coordination with DPR: CPHD and the Department of Parks and Recreation (DPR) have collaborated in the past year on the phasing and sequencing of zoning changes that would be evaluated as part of the implementation of the 2019 [Public Spaces Master Plan \(PSMP\)](#). DPR staff have identified several types of amenities and features that are commonly programmed for public spaces that considered *structures* for the purposes of zoning – leaving no other options than to locate them outside of required setback areas. By considering these amenities and features as part of this study, staff can recommend zoning changes that would facilitate more creative and efficient public spaces.

Moreover, the fence standards that apply to lots with SWM facilities control the height and placement of fences for public spaces. In particular, the maximum fence height requirement of four feet along a front yard lot line that applies to all fence types can preclude the meaningful enclosure of a tennis court, basketball court, or similar athletic-use facility. A taller fence would prevent play equipment from escaping such facilities during athletic activities.

Zoning Ordinance Reformat: Since 1942, the ACZO has referenced public utilities in various formats as a use that is subject to County Board approval. The 1950 ACZO specified that public utilities in the R-20: One-Family Dwelling District (R-20) required County Board approval of a use permit. Through the ACZO's "pyramid" structure of determining which land uses were permitted in which zoning districts, virtually all of the zoning districts included reference language in their list of permitted uses that would permit public utilities, subject to a County Board use permit approval, in their respective districts.

As part of the ACZO reformatting initiative in 2013-2015, the permitted land uses for each zoning district were converted from individual lists to use tables for each of the main categories of districts – Public (P), Residential (R), Multiple-Family (RA), Commercial/Mixed Use (C), and Industrial (M). Land use categories (Article §12) were also added to clarify the purpose and intent for groupings of similar uses and to assist the Zoning Administrator in issuing determinations for uses which are undefined.

PUBLIC (P) DISTRICTS PRINCIPAL USE TABLE					
Use Category	Specific Use Types	S-3A	S-D	P-S	Use Standards
KEY: P = allowed by-right; U = requires use permit approval; S = requires site plan approval; Blank cell = not permitted					
Public, Civic and Institutional Use Categories (§12.2.4)					
Utilities, Major (See §12.2.4.K)	Electrical generating plants and substations			P	
	Wastewater treatment plants			P	
	Water storage facilities			P	
	All other major utilities	U		U	§12.4.9
Utilities, Minor (See §12.2.4.K)	Bus shelters; bike share stations	U		U	§12.4.4
	Wastewater pump stations			P	
	Water pump station			P	

Figure 2: An excerpt from the Public district use table found in §4.1.2 of the ACZO

Section 12.2.4.K, the use category that includes stormwater management facilities, was incorporated into the ACZO in 2013. The Public districts use table (Figure 2) was similarly incorporated into the ACZO at this time, identifying individual land uses as well as referencing “All other major utilities” to signify that major utilities which are unlisted but encapsulated within the list of common examples found in §12.2.4.K may be permitted in accordance with the use table. For example, although *railroads and railroad right-of-way and tracks* are unlisted in the Public districts principal use table, they are listed as an example of a *major utility* and thus would be permitted by County Board use permit approval in the S-3A and P-S districts.

Adopted Policy

The review of the ACZO’s standards for SWM facilities and public space features is rooted in several adopted policies and ongoing County programs. The following sections outline this study’s concurrence with these policies and programs.

Stormwater Master Plan: In 2014, the County Board adopted the [Stormwater Master Plan](#), which was formulated using findings and recommendations from a preceding [storm sewer system capacity study](#). The Stormwater Master Plan is a guide for decision-making on SWM goals, and it calls for reducing urban sources of pollution, protecting Arlington’s streams and watersheds, and improving the health of the Potomac River and Chesapeake Bay.

Changes to the ACZO that would make the siting and establishment of SWM facilities on public lands easier directly align with several strategies within the Stormwater Master Plan, including:

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- Strategy 1: Reduce flooding risks to public and private property
 - Strategy 2: Maintain and upgrade stormwater infrastructure
 - Strategy 4: Improve existing stormwater management facilities and construct new facilities
 - Strategy 9: Initiate climate adaptation and resilience planning

Flood Resilient Arlington: As previously discussed, the Flood Resilient Arlington initiative is a multi-part program with the purpose of addressing localized flooding which has become more frequent and severe in recent years. The program encompasses six primary focus areas:

- Increased analytics and data assessment
- New types and locations for capacity projects
- Increased SWM requirements for development
- Increased funding for SWM through bonds and the [Capital Improvement Plan \(CIP\)](#)
- Voluntary property acquisition in flood-prone areas; and,
- Floodproofing outreach

Changes to the ACZO which would permit SWM facilities on public lands and allow greater flexibility to locate above-ground features within required setbacks aligns directly with the second bullet above.

Implementation of the Public Spaces Master Plan: As previously discussed, the County Board adopted in 2019 the [Public Spaces Master Plan \(PSMP\)](#), which identifies the major public space needs for Arlington and guides the implementation of public space improvements identified and prioritized in Arlington’s CIP. As part of implementing the PSMP’s recommendations, the [FY22-23 CPHD Planning Division Work Program](#) identifies a multi-phase zoning study which would modernize land use standards, terminology, and processes for a host of different topics related to public space development. This zoning study, in part, addresses the PSMP’s recommendations.

By evaluating some features found in public spaces into this zoning study, the ACZO can continue to evolve and meet anticipated public spaces needs. Flexibility to allow more types of public space features within required setbacks can be particularly helpful to DPR when evaluating the feasibility of design options for smaller, irregularly-shaped lots and/or lots encumbered by Resource Protection Areas (RPAs) and similar environmental constraints. Moreover, for SWM facilities to be installed in public parks, zoning flexibility would allow for coordinated site layouts which can enable certain types of SWM facilities to also serve as park amenities, incorporating the SWM feature into the park users’ experience.

According to the PSMP, approximately 46% of Arlington’s public parks are two acres in size or less – requiring increasingly creative solutions to provide natural areas, athletic opportunities, and leisure experiences all within small spaces.

FY 2023 – FY 2032 Capital Improvement Plan: In July 2022, the County Board adopted a 10 year, \$3.9 billion CIP that funds community infrastructure, public spaces, Metro and other transportation projects, public utilities, SWM, and flood mitigation. The CIP includes [\\$228.9 million dollars](#) devoted to SWM. This funding accounts for capacity project feasibility studies, implementation of priorities identified in the 2014 Stormwater Master Plan, and capacity improvements for several watersheds with critical needs. These include Crossman Run, Lubber Run, Spout Run, Stohlman’s Run, and Torreyson Run.

Through coordination with DES, several types of SWM projects are being considered for these areas and others within Arlington. More flexible zoning standards which enable the siting of SWM facilities on public lands, with increased fence height and encroachment allowances into required setbacks, would assist in the implementation of these CIP projects.

Scope of Study

This study focuses on zoning changes to address near-term SWM needs, but staff acknowledges that additional work would be needed to continue modernizing the ACZO and to meet additional public facilities needs. The FY22-23 Work Plan identifies Public district modernization as a first tier study, and staff has to date conducted introductory scoping work on what needs DES foresees for public facilities and public uses in the near- and mid-term.

Future work in coordination with DES would consider and can account for potential changes to meet the County operational facilities and assist with Arlington Public Schools (APS) planning.

In addition, the PSMP’s Action Plan Recommendation which called for an evaluation of the ACZO’s standards for public spaces cited numerous areas of consideration beyond setbacks and fencing. These areas include athletic field lighting, parking requirements, and building height among others. In coordination discussions with DPR, staff has cited other related topics in the ACZO which warrant further study. For example, the PSMP introduced new terminology for describing and understanding public spaces, such as *casual use spaces*, and growing trends for park use not formally acknowledged in the ACZO, such as *dog parks and dog runs*. The ACZO also requires public spaces which are located in R, RA, C, and M districts to be approved by County Board use permit, requiring an extra step in the public space development process that has similar functions for public process to DPR’s community-oriented master planning process.

Staff anticipates these topics will be addressed as part of subsequent phases of the PSMP implementation work that is already identified on the FY22-23 Work Plan. Staff continues to actively coordinate with DPR on future zoning work, and more details on the phasing and sequencing of this work will be available later in 2023.

Analysis

To address these limitations in the ACZO, staff has developed draft edits to the existing zoning language that would update the utilities use category description and would enable the establishment of SWM facilities as a by-right use on public lands. Staff has crafted new zoning language that, if adopted by the County Board, could allow SWM facilities and certain types of

public space amenities/features to be located within required setbacks. Furthermore, staff’s analysis addresses increased fence height, increased flexibility for the location of fencing, use standards for backup generators and auxiliary pumps, flood walls, and additional editorial recommendations for the ACZO.

Utilities use category

The types of SWM facilities that are the focus of this study would be considered *minor utilities* per the use category language specified in §12.2.4.K. However, the existing use category language classifies “stormwater pumping stations” as a *major utility*, which are generally approved by County Board use permit. In instances where backup generators and auxiliary pumps would be needed, SWM facilities can and should still be categorized as *minor utilities*, as the additional public hearing process and procedural requirements that come with a use permit review are similar and commensurate with the standard public outreach process used by DES that’s aligned with Arlington’s [Six-Step Public Engagement Guide](#).

As previously discussed, there may be instances where an underground detention vault or similar SWM facility may need to be supported by an emergency generator and auxiliary pumps. The design preference for a SWM facility is to rely on a gravity system for discharge, where stormwater is collected by the SWM facility, detained, and released for an extended period of time into downstream pipes and ultimately into watershed’s streams. In some situations, a site’s topography and its elevation in comparison with the existing conveyance system may eliminate the option of relying on gravity if the sewer pipes are at too high of an elevation above the SWM facility. In these situations, the SWM facility would utilize a *lift station*, or an auxiliary pump, to lift the detained water to the storm sewer pipe system’s elevation. Figure 3 contains an image to illustrate the mechanics of how a lift station works.

According to DES, such pumps would only need to operate during and/or as a result of an extremely intense, high volume rain storms.

The pump system operates at a low, minimal volume during such storms, and backup generators are only engaged to run them in the event of a power outage. Pumps for SWM facilities do not operate on a continuous basis. This description of how auxiliary pumps would be utilized aligns more appropriately with the *minor utilities* category as opposed to the *major utilities* category.

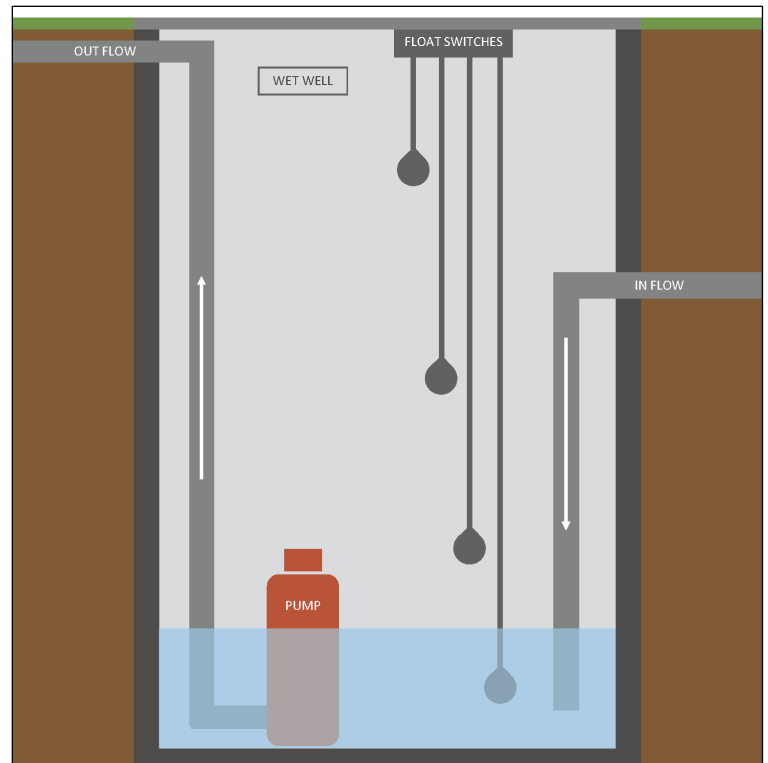


Figure 3: Lift stations collect stormwater and use pumps to convey the water to stormwater pipes at a higher elevation when gravity-reliant systems can't be utilized (Source: [Microbial Discovery Group](#))

Staff recommends relocating the “stormwater pumping station” reference from the *major utilities* category to the *minor utilities* category.

In addition, staff sees a need to differentiate *flood walls* from other types of walls that are referenced and regulated in the ACZO. *Flood walls* are constructed to withstand hydrostatic pressure and protect people and property from flood waters. Since they are unmanned and serve a localized area, they can be considered *minor utilities*. Staff recommends listing *flood walls* as one of the *minor utilities* in §12.2.4.K.2(a).

Although overland relief measures are an important strategy used for managing stormwater and protecting people and property from flooding, they typically consist of landscaping, berming, and vegetated channels instead of structures. In some instances, the overland relief measure may incorporate a *flood wall* to supplement the overall flood risk mitigation strategy. While *flood walls* would be regulated as a structure by the ACZO, the other components of overland relief would not be considered a land use or a structure, and thus would not be subject to applicable regulations in the ACZO like the other SWM facilities referenced in this staff report.

Minor utilities as a by-right use in the Public districts use table

As previously discussed, in the R, RA, C, and M districts, *minor utilities* are permitted as a by-right use with the exception of bike share stations and bus shelters. Staff has examined project files used as part of the 2013-2015 ACZO reformatting initiative to determine if there was an intentional decision to prohibit the establishment of other types of *minor utilities* in the S-3A, S-D, and P-S districts, but no information was found to demonstrate such intent.

To align the Public (P) district use table with how *minor utilities* are permitted in other zoning districts, staff recommends inserting a row for “All other minor utilities” in the “Utilities, Minor” section of the use table, and placing a “P” in each district’s cell to signify that *minor utilities* are a permitted, by-right use. Minor utilities such as SWM facilities are already a by-right use in residential zoning districts, allowing the public utilities network of water, sanitary sewer, storm sewer, and electricity lines to reach County residents. As a best practice, zoning standards which differentiate where and how a utility’s distribution network can be established should be standardized so that land use requirements are not in conflict with public utility’s service delivery and access needs.

Although staff recommends SWM facilities to continue to be considered a by-right use, staff acknowledges that the disruption and disturbance during construction that a SWM facility can cause can be significant depending on the size and scale of the facility. For these types of SWM facilities, DES staff has and will continue to manage these projects by using the County’s [Six-Step Public Engagement Guide](#) and working with nearby residents and stakeholders before and during construction. DES utilizes this public engagement process to work directly with the community and identify key issues to be addressed as part of the project. Community concerns about topics such as land disturbance, construction hours, and timelines are surfaced and addressed by County staff with public engagement. The consistent, continued incorporation of public engagement into the project’s planning, coupled with public awareness and County Board oversight as part of the CIP review process, obviates the need for special exception approval processes for SWM facilities.

Encroachments into setbacks

Under the ACZO's existing requirements, above-ground structures associated with SWM facilities must adhere to setback requirements specified in Article 3. In some scenarios, above-ground structures may need to be located within a required setback to optimize the functionality of the SWM facility or to ensure that stormwater collection is occurring at the lowest elevation point at the site. Staff has included draft language in Attachment 1 that would allow SWM facilities to be located within a required setback by adding them to the list of encroachments specified in [§3.2.6.A.3\(a\)](#), that are allowed in a required yard.

For public spaces such as parks, staff has coordinated with DPR to identify the types of amenities and features that are commonly considered during the master planning process. The following list highlights many of these amenities and features, which are considered structures per the ACZO:

- Tables, benches, seatwalls and other forms of seating;
- Decorative gateway features, such as fence piers and arbors, used to define entrances to the public space;
- Bicycle racks;
- Trash and recycling receptacles;
- Bollards, planters, and similar decorative design features;
- Structures using sailcloth or similar woven materials to provide shade;
- Performance stages;
- Pedestrian/trail lighting, not to exceed 15 feet in height;
- Athletic or small game courts, such as basketball hoops and netting and/or backstops for tennis/pickleball; and,
- Structures associated with athletic fields, such as dugouts without overhead structures.

DPR staff highlighted several prospective benefits to the public space design process for allowing such structures to encroach into a required setback. As previously discussed, almost half of the public spaces within the County's inventory are less than two acres in size. Setback flexibility allows for more usable area to program and install public space amenities and features. Greater efficiencies with site layouts can also enable more opportunities for preserving natural vegetation, creating more casual use space, and protecting environmentally sensitive areas on a public space property such as those within a floodway or RPA.

To differentiate pedestrian/trail lighting from athletic field lighting, which is outside of the scope of this study, staff recommends allowing such lighting within a setback with a specified, maximum height of 15 feet. According to DPR staff, lighting standards typically utilized for illumination in public spaces should be no taller than 15 feet to balance a public space's illumination coverage with the scale of vegetation and amenities that contribute to the park user's experience. This is the typical maximum height considered for such lighting as part of recent

park planning projects. As previously discussed, athletic field lighting will be the subject of a future phase of the PSMP implementation work.

Staff recommends permitting these types of amenities and features to be located within a required street setback in a public space such as a park. These areas would be those immediately adjacent to the street for an interior lot, as well as the area along the two lot lines abutting the right-of-way for a corner lot. While staff considered recommending encroachment for side and rear yards, too, staff recommends further analysis on this topic to address the proximity of public space activities and their compatibility with adjacent residents or other adjacent land uses. Staff intends to analyze these options for additional encroachment allowances with future phases of the PSMP implementation work.

Fencing

General Format: In coordination with CPHD’s Zoning Division, staff recommends several editorial and formatting changes to the existing fence and wall standards ([§3.2.6.A.3\(e\)](#)). The existing paragraph is a lengthy two sentences that contains multiple scenarios for maximum fence/wall heights and placement of fences and walls that can be difficult to understand and administer. The draft edits would reconfigure the fence standards into a subsection for street setbacks, a subsection for side and rear lot line setbacks, and additional subsections for regulations applicable to all fences and walls. By reconfiguring the height standards in this manner, the fencing standards can be more intuitive and easier to manage as part of customer service inquiries and permit reviews.

Fencing for SWM Facilities: Fences up to eight feet tall are customarily used for SWM facilities to enclose above-ground equipment for security purposes. This prevents unsafe circumstances, theft, and defacing with graffiti by creating increased difficulty for people to readily scale the fence and access a SWM facility. Moreover, certain types of facilities can collect storm water at a rapid rate during rain storms, inundating quickly and creating life safety risks for people.

As previously discussed, the ACZO’s existing standards permit fences to only be installed up to four feet tall along a public right-of-way, six feet along the side and rear lot lines of corner lots, and seven feet along the side and rear lot lines of interior lots. Staff recommends adding a new fence height standard solely for fencing associated with SWF facilities, with a maximum height of eight feet tall regardless of the yard or lot line along which it is installed.

Flood Walls: According to DES, flood walls may be a preferred SWM facility to use along major streams and/or in tandem with overland relief measures. Currently, walls are regulated similarly to fences, with each needing to meet identical maximum height requirements. Flood walls are a particular type of wall used only in areas of special flood hazard, and may need to be up to 14’ tall in certain situations when the wall is to be located at a low point on a property close to major streams. An example of this would be Four Mile Run near its confluence with the Potomac River, where the stream widens considerably within proximity of the County’s Water Pollution Control Plant.

To differentiate flood walls from other types of fences and walls, staff recommends the inclusion of a separate definition for flood walls in Article 18 (Definitions), and a specific mention of flood walls in the public utilities section of Article 12 (Use Standards). Staff has integrated flood walls into the reformatted fence and wall height section, recommending that flood walls of up to

14 feet tall be permitted within either a front, side, or rear yard. This distinction would prevent the construction of a wall beyond the maximum heights prescribed by the ACZO in a residential, commercial/mixed use, or industrial setting that is not a special flood hazard area.

Fencing for Public Spaces: For public spaces, the same limitations on fence and wall height for SWM facilities have a similar impact on public spaces. Depending on the location of an athletic court or similar amenities that would warrant enclosure, fence height standards would either be four, six, or seven feet. Based on coordination with DPR, staff recommends consideration of a maximum height of eight feet for fencing for public spaces, regardless of yard location. This update would give DPR greater flexibility for siting amenities as part of the park master planning process that customarily require a tall fence for enclosure.

Small public spaces, particularly in more urban settings, have numerous constraints which influence the placement and height of fencing. Athletic courts that would, for example, be used by basketball players and/or tennis players require fencing heights greater than permitted currently in the ACZO to prevent balls from escaping the court and entering into right-of-way or an adjacent property. Taller fences can help prevent pedestrians and other onlookers from being unnecessarily struck by a ball. Fences up to eight feet in height serve similar functions for diamond athletic fields to protect passers-by along the 1st and 3rd base foul lines.

Athletic courts, as well as and play equipment used by small children, require clear zone space around the area of play that can typically range from three to six feet based on the type of activity. For small public spaces where such features are desired, the ACZO's three-foot setback requirement from a public right-of-way could further minimize the available space for these types of features, necessitating alternatives to be considered that can occupy a more confined area.

Staff sees benefits that can be achieved with greater flexibility to allow fences and walls to be located closer than three feet to the public right-of-way. However, staff is cognizant of the need to provide clear zones for pedestrians along rights-of-way for ease of passing and adequate space from motor vehicles. According to staff research, the three-foot fence setback requirement was adopted by the County Board in 1977 as part of a zoning text amendment to increase the maximum height for fences in the side yard setbacks of corner lots that face a public street. While the maximum fence height was raised from four feet to six feet to enable rear yard enclosures, staff recommended the addition of the three-foot setback. The 1977 staff report states that:

“This placement would provide a three-foot strip for emergency pedestrian use, maintain to some extent the ‘openness’ envisioned by the setback requirement, and avoid the ‘walled alley’ appearance if six-foot fences were placed directly adjacent to the sidewalk or curb.”

The draft text enclosed in Attachment 1 includes edits that would allow fencing for public spaces to be installed at the property line, without a three-foot setback requirement. Staff will seek further feedback from the Planning Commission's Zoning Committee during its January 17th meeting on this topic and will use this feedback and continued staff analysis to evaluate the necessity of further edits that would provide sufficient clear zones for pedestrians when fencing is utilized.

The recommended edits to the fence and wall standards include additional minor changes:

- Reformatted language which carries forward an allowance for open mesh type fences enclosing any school or playground and a reference to the visual clearance requirements specified in §3.2.6.A.4.; and,



Figure 4: The retaining walls alongside the playground in Cherrydale Park, which must have safety handrails installed at the top as a requirement of the VUSBC (Source: DPR)

- A use standard that allows handrails and guardrails that would otherwise be required by the Virginia Uniform Statewide Building Code (VUSBC) to be excluded from the maximum height requirement for a wall. Per coordination with DPR and the Zoning Division, handrails atop a wall that are required by the VUSBC given the wall's height to prevent falls have needed to be arbitrarily stepped back from the top of a wall to meet the ACZO's height standards. This has been the case for retaining walls for multi-level features or public spaces with changes in topography that require a wall (Figure 4); this edit would allow for the handrail to be placed in the center of the wall as intended by the VUSBC.

Emergency generators and auxiliary pumps

Pumps: Given the increased costs and ongoing maintenance obligations, the preferred approach for designing and constructing a new SWM facility is to use gravity-based systems, without auxiliary pumps for lift stations, to collect, detain, and discharge storm water. As previously discussed, there could be scenarios based on local topography and site elevation where a SWM facility would need to be equipped with auxiliary pumps. These pumps may operate during and after rain storms to assist the SWM facility's capacity to convey the storm water into the storm sewer system, minimizing flooding risks and protecting people and property within the watershed.

Currently, there are no SWM facilities in Arlington which utilize auxiliary pumps. Pump facilities are used instead in lift stations which serve the sanitary sewer system. The facilities are enclosed in brick buildings using Colonial-style architectural designs. The pumps at each facility are tested on a quarterly and annual basis, but the testing for a pump at a SWM facility would likely need to be performed on a monthly basis. Testing occurs through running the pump system approximately 30 minutes to confirm that there are no issues with its operations. A failed test would necessitate subsequent testing where the pumps are engaged for a two hour duration.

According to DES, the location of the pumps must be at a low elevation on a site so that storm water is being detained and conveyed into the storm sewer system. The building that encloses the

pumps' generators, however, can be sited away from lot lines and outside of required setbacks, as the backup electricity provided by the generator to the pumps can be done through transmission wiring.

Generators: To ensure that disruption to nearby residents is minimized in a reasonable manner, staff has recommended use standards which would require the generator to adhere to existing setback standards. The ACZO specifies that emergency generators may encroach into a required side or rear setback, but must maintain an eight-foot distance from a side lot line or 10 feet from a rear lot line. If the generator is screened with a fence or vegetation, the distances can be reduced to five feet for a side lot line and eight feet for a rear or front lot line.

Staff also recommends use standards which would require auxiliary pumps and emergency generators to be fully enclosed, which aligns with DES's current and intended practice. The ACZO has an existing use standard for major and minor utilities which requires the exterior appearance of a building to be similar to those in the surrounding neighborhood.

In rare instances, as part of the planning and feasibility analysis for an individual site, the generator for a SWM facility may need to be located closer to a lot line than permitted by the ACZO. Such siting options would be incorporated into the public engagement process for the individual SWM facility, subject to public feedback from nearby residents. These instances would warrant flexibility that would be best permitted through granting the County Board modification authority as part of a use permit review to assess the site specific issues that could come with siting auxiliary pumps and/or emergency generators within close proximity to adjacent properties. Staff has included language in Attachment 1 that would enable this modification option by the County Board through a use permit.

Additional recommendations

Since both §12.4.9 and §12.4.10 contained identical language for both major and minor utilities, staff recommends an editorial change to collapse these two sections into one. Should future zoning studies result in recommendations for use standards for a particular *major utility*, those use standards can be incorporated into the unified section.

For consistency, staff recommends including references in each of the ACZO's use tables that refers to §12.4.9, which lists the use standards for major and minor utilities. This constitutes adding a mention of §12.4.9 to each one of the "All other minor utilities" rows in the R, RA, C, M, and Columbia Pike Form Based Code District principal use tables.

Community Engagement

This zoning study's recommendations would implement policies from several County Board-adopted plans and policies. Public lands could be disrupted during the construction of a SWM facility for an extended period of time, resulting in a temporary loss of a public space. Although impacts would be addressed and mitigated to the greatest extent possible during planning and design, some SWM facility projects could result in reductions of tree canopy and temporary disruptions in residential areas due to construction activity.

Given these broad implications, balanced with the significant potential benefits for reducing flood risk for multiple watersheds in Arlington, staff has used tools primarily from the *Involve* level of engagement as referenced in the [Six-Step Public Engagement Guide](#).

To date, staff has conducted the following engagement to inform the study's recommendations:

- Staff has placed an overview of the study's scope, including the study schedule and key meeting dates, on the County's [Zoning Studies website](#). Staff contact information can be found here, along with a comment submission inbox and other informational resources.
- Staff has created [a dedicated website for the study](#), serving as an information clearinghouse for members of the public who would like to be informed on this work. The website includes an engagement timeline showing meeting presentations and recordings, when available, for past and future engagement opportunities.
- DES staff made reference to the study's scope and eventual kickoff at a [briefing of the Arlington County Civic Federation](#) in February 2022 (presentation begins at 1:14:40).
- Throughout Fall 2022, DES staff informed members of the public about the study's goals, objectives, scope, and timeline during a series of meetings with groups of stakeholders from [six of the County's critical watersheds](#). These groups consist largely of residents who live within the Crossman Run, Westover Branch, Torreyson Run, Lubber Run, and Spout Run watersheds. The sixth group includes representatives and residents of the Columbia Forest and Arlington Mill civic associations in the western portion of the Columbia Pike Corridor.
- Staff provided a briefing to the [Public Spaces Master Plan Implementation Advisory Committee \(PSMP-IAC\)](#) on October 17, 2022 ([presentation, Slides 21-31](#) | [video recording](#)). Commissioners expressed strong interest in seeing not just setback requirements and fencing standards addressed, but the complete complement of subject matters referenced in the PSMP Action Plan. As previously discussed, zoning studies associated with implementing the PSMP are identified as a first tier study which would require multiple phases to address the broad scope of subject matters identified in the PSMP for evaluation. Staff continues to meet regularly with DPR staff to coordinate this work, and staff anticipates additional progress on this body of work to occur in 2023.

Commissioners also asked questions about the public engagement that would be utilized for SWM projects that would occur in public spaces. Commissioners suggested a minimum requirement for notifications to address potential resident complaints that could arise during a SWM project's construction. Staff explained that each individual SWM project would have a tailored public engagement process that invites nearby residents and stakeholders to ask questions, provide feedback, and obtain contact information for County staff who are responsible for the project's management. As previously discussed, each SWM project would be managed using the County's Six Step Public Engagement Guide, which involves clearly defining the project, identifying stakeholders, determining the appropriate engagement level, creating/implementing communication strategies, conducting analysis for decision makers, and completing project closeout.

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- Staff provided a briefing to the [Park and Recreation Commission](#) on October 25, 2022 ([presentation](#) | [video recording](#)). Commissioners discussed the following topics associated with the zoning study:
 - The essential importance of having SWM facilities on public lands.
 - The potential use of detained storm water for irrigation on public lands.
 - The zoning districts for regional public spaces like those owned and operated by NOVA Parks.
 - The permitting process to be utilized, such as whether or not a special exception would be needed for each individual SWM project.
 - The implications of the existing zoning standards and the recommended changes that would address fencing in public spaces and athletic field structures such as the backstop of a diamond field.
 - The overall role and proportion of burden that the County’s public spaces should be asked to bear to manage stormwater, and the concern that SWM facilities sited in public spaces would result in a net loss of usable park space for residents. Commissioners suggested policies that would mandate increases in public space should there be a loss due to the installation of a SWM facility.
 - Staff provided a briefing to the Climate Change, Energy and Environment Commission (C2E2) on November 21st, 2022. Commissioners expressed general support for the study’s objectives and preliminary concepts that were presented, noting that the proposed changes would be important for helping improve flood resilience. Staff answered questions about the mechanics and functioning of underground detention vaults, and if the water is able to be reused for irrigation or other purposes.
 - Staff held a virtual information session for members of the public on December 14, 2022. Attendees asked questions on a variety of subjects related to the study:
 - Staff fielded questions about the location and schedule for new SWM facilities to be constructed if the County Board were to adopt the zoning text amendment. While DES staff has met on multiple occasions with stakeholders in the critical watershed groups, and provided preliminary concepts for where certain types of SWM facilities could be beneficial, staff continues to examine a variety of options. Factors such as cost and feasibility continue to inform this analysis to ensure that a proposed SWF facility would have a proportional impact on reducing a watershed’s flooding risk when compared to its cost.
 - Residents asked questions about the source of the data modeling that was performed to inform DES staff’s analysis. Staff continues to utilize models that were completed in 2013 for the capacity study that informed the 2014 Stormwater Master Plan.
 - Residents inquired about the link between this study and the Chesapeake Bay Preservation Ordinance (CBPO). Staff explained that there is no explicit link, noting that development in Arlington must satisfy all applicable zoning standards and all water quantity and quality standards within the CBPO to be approved.

-
- Staff was asked whether the StormwaterWise rebate program which had been discontinued would be reinstated. This program provided residents with incentives through a reimbursement/matching grant program to install SWM best management practices (BMPs) on their property, such as cisterns, green roofs, and infiltration trenches. According to DES, the rebate program does not have plans to be reinstated at this time.
 - Staff received feedback on presentation slides showing vegetated swales for overland relief, commenting that the swales should be designed with a more natural appearance as opposed to using solely turf grass. Staff can integrate this feedback into future designs for overland relief measures.
 - Residents asked about peer and neighboring jurisdictions, and how their zoning standards address SWM facilities. Staff explained that a review of a small number of neighboring jurisdictions had been conducted during the initial scoping of the study, and that there were no standardized best practices or common themes that arose from this review. The key findings from this review were the following:
 1. Stormwater management facilities are sometimes individually defined but are typically not listed in a use table or individually listed as a permitted use.
 2. Most of the jurisdictions have definitions for *public uses*, which encompass a host of government functions and may be presumed to include stormwater management facilities.
 3. Most of the jurisdictions acknowledge that the distribution and transmission systems for public utilities can be located by-right in any zoning district or are exempt from certain or all zoning requirements.
 4. Some of the jurisdictions separately distinguish major facilities such as water treatment plants, electricity generator plants, or solid waste facilities from other conventional public uses, and those that do have stricter zoning standards for them.
 - Residents had questions about the approval process that would be used to permit SWM facilities, and whether the County would need to pursue a variance or similar special exception process. Staff explained that the preliminary approach was to continue to characterize SWM facilities as *minor utilities*, given that they are public facilities without a constant employee presence that serve a limited area, and therefore could be implemented as a by right use.

Conclusion

Staff has formulated several recommendations as part of this study to give more flexibility to the siting, layout, and establishment of SWM facilities as well as amenities and features in public spaces. Given the urbanized nature of the County, where there are few opportunities for adding SWM facilities and public space in a “greenfield” manner using undeveloped land, the County will need to optimize the collocation of various types of public facilities to meet the community’s needs. Master planning opportunities for public spaces will attempt to address

needs for recreation, leisure, access to natural resources, and casual use – along with SWM and environmental protection.

These needs, which will intensify as the County’s population continues to grow, will often need to be met within smaller spaces. The PSMP calls for the addition of 30 acres of public space by 2029, and much of the growth will likely be in the form of smaller, neighborhood-scale public spaces. Master planning efforts for public spaces, and similar community engagement efforts associated with new SWM facilities, should endeavor to balance public needs with those of adjacent and nearby property owners.

Several of the amendments recommended in this study update and modernize the ACZO to more directly serve its purpose and intent of regulating and mitigating the impacts of land use. Zoning standards which impose restrictions on the location and capacity of the public utilities network can disrupt and hamper the County’s ability to provide public facilities such as water, sanitary sewer, electricity, and stormwater management to County residents and businesses. The recommended edits would clarify the limits that the County’s zoning standards have in implementing adopted land use policies.

Anticipated Schedule

- January 17, 2023: ZOCO Meeting
- February 18/21, 2023: County Board Request to Advertise
- March 6/8, 2023: Planning Commission final consideration and recommendation
- March 18/21, 2023: County Board final consideration and action

Attachments

- Attachment 1: Draft Zoning Text
- Attachment 2: SWM Facilities Photos/Illustrations
- Attachment 3: Fence Diagram

Zoning Ordinance Amendment – Stormwater Management/Public Spaces

Proposed amendments are shown with **bold underline** to denote new text, and ~~**bold strikethrough**~~ to denote deleted text.

Article 3. Density and Dimensional Standards

§3.2. Bulk, Coverage and Placement Requirements

§3.2.6. Placement

The following regulations shall govern the placement on a lot of any building or structure, or addition thereto, hereafter erected, except as may be allowed by site plan approval or as otherwise specifically provided in this Zoning Ordinance:

A. Setbacks (required yards)

1. ...

...

3. Encroachments allowed into required yards and courts

The following encroachments shall be allowed into required yards and courts.

(a) No building or structure, or addition thereto, other than walls or fences, shall encroach into a required yard or court; except that:

(1) ...

...

(7) Stormwater retention and detention facilities, flood walls, and stormwater pumping stations, as specified in §12.2.4.K, may encroach into a required yard.

(8) The following structures associated with parks may encroach into a required setback from any street:

i. **Accessory structures which serve the users of the park and/or open space, such as but not limited to seating, gateway/entrance features, shade structures, and planters;**

ii. **Accessory structures which support athletic or leisure activity, such as but not limited to performance stages, athletic or small game courts, and, play equipment, and;**

iii. **Pedestrian and trail lighting, not to exceed 15' in height.**

(b) ...

...

~~**(e) The front, side and rear yard requirements of this zoning ordinance shall not be deemed to prohibit any otherwise lawful fence or wall which is not more than**~~

32 ~~four feet high; provided, however, that a fence or wall along the rear lot line or~~
33 ~~along a side lot line to the rear of the required setback line may be erected to a~~
34 ~~height not exceeding seven feet; provided, further, that in side and rear yards of~~
35 ~~corner lots, fences up to six feet in height may be erected in the required setback~~
36 ~~in order to permit the enclosure of the side and rear yards for privacy so long as~~
37 ~~the requirements of §3.2.6.A.4, relating to visual clearance are maintained. No~~
38 ~~fence exceeding four feet in height shall be placed within three feet of any public~~
39 ~~right-of-way. This provision shall not be interpreted to prohibit the erection of~~
40 ~~any open mesh type fence enclosing any school or playground. Fences and walls~~
41 ~~are permitted to encroach into required setbacks and yards as follows:~~

42 (1) Fences and walls up to 4 feet in height are permitted to encroach into any
43 required street setback, except:

44 i. On corner lots, fences and walls up to 6 feet in height are
45 permitted in street setbacks to enclose side and rear yards
46 located within a required street setbacks but no closer than 3 feet
47 from any street right-of-way.

48 ii. On any lot used for parks and open space in accordance with
49 §12.2.4.F, fences and walls up to 8 feet in height are permitted to
50 encroach into any required street setback.

51 iii. On any lot used for stormwater management facilities in
52 accordance with §12.2.4.K, fences and walls up to 8 feet in height
53 are permitted to encroach into any required street setback, but
54 no closer than 3 feet from any street right-of-way.

55 iv. Flood walls up to 14 feet in height are permitted to encroach into
56 any required street setback.

57 (2) Fences and walls up to 7 feet in height are permitted in any required rear
58 or side lot line setback, except:

59 i. On corner lots, fences and walls up to 7 feet in height are only
60 permitted in rear or side lot line setbacks when not located
61 within a required street setback, per §3.2.6.A.3.e.1.i above.

62 ii. On any lot used for parks and open space in accordance with
63 §12.2.4.F, fences and walls up to 8 feet in height are permitted in
64 any required rear or side lot line setback.

65 iii. On any lot used for stormwater management facilities in
66 accordance with §12.2.4.K, fences and walls up to 8 feet in height
67 are permitted in any required rear or side lot line setback.

68 iv. Flood walls up to 14 feet in height are permitted in any required
69 rear or side lot line setback.

70 (3) Handrails and guardrails affixed to the top of a wall which are required by
71 the Virginia Uniform Statewide Building Code for purposes of safety shall
72 be excluded from the calculations for maximum height for a wall.

- 73 (4) All fences and walls, including handrails and guardrails permitted per
 74 §3.2.6.A.3.e.3 above, are subject to the visual clearance requirements in
 75 §3.2.6.A.4.
- 76 (5) Any open mesh type fence enclosing any school or playground is
 77 permitted in any required setback.

Article 4. Public (P) Districts

§4.1. Public (P) Districts Use Tables

§4.1.2. Public (P) districts principal use table

Table §4.1.2 lists the principal uses allowed within the P districts.

A. ...

...

G. Use Categories

All of the use categories listed in the table below are described in §12.2. The first column of the use table lists the sub-categories. The second column of the use table lists the specific use types included within the respective sub-categories.

PUBLIC (P) DISTRICTS PRINCIPAL USE TABLE					
Use Category	Specific Use Types	S-3A	S-D	P-S	Use Standards
KEY: P = allowed by-right; U = requires use permit approval; S = requires site plan approval; Blank cell = not permitted					
Public, Civic and Institutional Use Categories (§12.2.4)					
Utilities, Major (See §12.2.4.K)	Electrical generating plants and substations			P	
	Wastewater treatment plants			P	
	Water storage facilities			P	
	All other major utilities	U		U	§12.4.9
Utilities, Minor (See §12.2.4.K)	Bus shelters; bike share stations	U		U	§12.4.4
	Wastewater pump stations			P	
	Water pump station			P	
	All other minor utilities	P	P	P	§12.4.9

Article 5. Residential (R) Districts

§5.1. Residential (R) Districts Use Tables

§5.1.2. Residential (R) districts principal use table

Table §5.1.2 lists the principal uses allowed within the P districts.

A. ...

...

H. Use Categories

All of the use categories listed in the table below are described in §12.2. The second column of the use table lists some of the specific use types included within the respective sub-categories.

RESIDENTIAL (R) DISTRICTS PRINCIPAL USE TABLE										
Use Category	Specific Use Types	R-20	R-10	R-10T	R-8	R-6	R-5	R15-30T	R2-7	Use Standards
KEY: P = allowed by-right; U = requires use permit approval; S = requires site plan approval; Blank cell = not permitted										
Public, Civic and Institutional Use Categories (§12.2.4)										
Utilities, major (See §12.2.4.K)	All major utilities	U	U	U	U	U	U	U	U	§12.4.9
Utilities, minor (See §12.2.4.K)	Bus shelters; bike share stations	U	U	U	U	U	U	U	U	
	All other minor utilities	P	P	P	P	P	P	P	P	<u>§12.4.9</u>

Article 6. Multiple-Family (RA) Districts

§6.1. Multiple-Family (RA) Districts Use Tables

§6.1.2. Residential (R) districts principal use table

Table §6.1.2 lists the principal uses allowed within the P districts.

A. ...

...

H. Use Categories

All of the use categories listed in the table below are described in §12.2. The second column of the use table lists some of the specific use types included within the respective sub-categories.

Multiple-family (RA) Districts Use Table						
Category	Specific Use Types	RA14-26	RA8-18	RA7-16	RA6-15	Use Standards
KEY: P = allowed by-right; U = requires use permit approval; S = requires site plan approval; Blank cell = not permitted						
Public, Civic and Institutional Use Categories (§12.2.4)						
Utilities, major (See §12.2.4.K)	All major utilities	U	U	U	U	§12.4.9
Utilities, minor (See §12.2.4.K)	Bus shelters; bike share stations	U	U	U	U	
	All other minor utilities	P	P	P	P	<u>§12.4.9</u>

Article 7. Commercial/ Mixed Use (C) Districts

§7.1. Commercial/Mixed Use (C) Districts Use Tables

§7.1.2. Residential (R) districts principal use table

Table §7.1.2 lists the principal uses allowed within the P districts.

A. ...

...

H. Use Categories

All of the use categories listed in the table below are described in §12.2. The second column of the use table lists some of the specific use types included within the respective sub-categories.

COMMERCIAL/MIXED USE (C) DISTRICTS PRINCIPAL USE TABLE																				
Specific Use Types	RA4.8	R-C	RA-H	RA-H-3.2	C-1-R	C-1	MU-VS	C-1-O	C-O-1.0	C-O-1.5	C-O-2.5	C-O	C-O-A	C-O ROSSLYN	C-O CRYSTAL CITY	C-2	C-TH	C-3	C-R	Use Standards
	KEY: C = requires use permit and site plan approval; P = allowed by-right; U = requires use permit approval; S = requires site plan approval; Blank cell = not permitted																			
Public, Civic and Institutional Use Categories (§12.2.4)																				
Utilities, major (See §12.2.4.K)	All major utilities	U	U	U	U	U	P	U	U	U	U	U	U	U	U	U	P	U	U	§12.4.9
Utilities, minor (See §12.2.4.K)	Bus shelters; bike share stations	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	
	All other minor utilities	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	§12.4.9

Article 8. Industrial (M) Districts

§8.1. Industrial (M) Districts Use Tables

§8.1.2. Industrial (M) districts principal use table

Table §8.1.2 lists the principal uses allowed within the P districts.

A. ...

...

G. Use Categories

All of the use categories listed in the table below are described in §12.2. The second column of the use table lists some of the specific use types included within the respective sub-categories.

INDUSTRIAL (M) DISTRICTS PRINCIPAL USE TABLE					
Use Category	Specific Use Types	CM	M-1	M-2	Use Standards
KEY: P = allowed by-right; U = requires use permit approval; S = requires site plan approval; Blank cell = not permitted					
Public, Civic and Institutional Use Categories (§12.2.4)					
Utilities, major (See §12.2.4.K)	Public utility service yard or electrical receiving or transforming station	P	P	P	§12.6.5
	Railroads and railroad right-of-way and tracks		P	P	
	Wastewater treatment plants		P	P	
Utilities, minor (See §12.2.4.K)	Bus shelters; bike share stations	U	U	U	
	Wastewater pump station		P	P	
	All other minor utilities	P	P	P	<u>§12.4.9</u>

Article 11. Overlay and Form Based Code Districts

§12.2. Use Categories

§11.1.5. Columbia Pike Form Based Code district principal use table

The following use table summarizes the principal use regulations of the CP-FBC district.

COLUMBIA PIKE FORM BASED CODE PRINCIPAL USE TABLE			
	Specific Use Types	CP-FBC	Use Standards
Public, Civic and Institutional Use Categories (§12.2.4)			
Utilities, major (See §12.2.4.K)	All major utilities	P	
Utilities, minor (See §12.2.4.K)	Bus shelters; bike share stations	U	
	All <u>other</u> minor utilities	P	<u>§12.4.9</u>

Article 12. Use Standards

§12.2. Use Categories

§12.2.4. Public, civic and institutional use categories

K. Utilities

1. Characteristics

Public or private infrastructure serving a limited area with no on-site personnel (minor utility) or the general community and may have on-site personnel (major utility).

2. Examples

(a) Minor

Examples of minor utilities include lift stations; public transit facilities, including bus shelters, bike share stations; stormwater retention and detention facilities; **stormwater pumping station; flood walls;** traction power stations; and water and wastewater pump stations.

(b) Major

Examples of major utilities include electrical generating plants and substations; electrical transmission facilities; incinerators; ~~stormwater pumping station;~~ telephone exchanges; television and radio broadcasting transmitters; static transformer stations; commercial and public utility radio towers; water and wastewater treatment plants; water storage facilities; railroads and railroad right-of-way and tracks.

3. Accessory uses

Accessory uses include car-sharing; control, monitoring, data or transmission equipment; parking; cell antennae; storage; and security measures, such as fences.

4. Uses not included

Governmental uses (see Governmental Facilities); maintenance or repair yards and buildings (see Light Industrial Service); park-and-ride facilities (see commercial parking); railroad car barns, yards, sidings and shops (see Heavy Industrial); reservoir (see Parks and Open Areas); telecommunications towers and facilities (see Telecommunications Towers and Facilities); TV and radio studios; and utility offices (see Office).

165 **§12.4. Public and Civic Use Standards**

166 **§12.4.9. Utilities, ~~major~~**

167 **A. Pumps and generators**

168 **1. Location**

169 **Generators associated with stormwater management facilities shall be subject to**
170 **setback standards specified in §3.2.6.A.**

171 **2. Enclosure**

172 **(a) Pumps associated with stormwater management facilities shall be located either**
173 **below ground or within a fully enclosed structure.**

174 **(b) Generators associated with stormwater management facilities shall be located**
175 **within a fully enclosed structure.**

176 **B. Appearance**

177 The exterior appearance of any building associated with ~~major~~ utilities shall be in keeping
178 with the character of the neighborhood in which it is located.

179 **C. Modifications**

180 **1. The County Board may, through use permit approval as specified in §15.4, modify**
181 **the regulations set forth in §12.4.9.**

182 **2. The County Board may, through use permit approval as specified in §15.4, modify**
183 **the maximum height of a flood wall as specified in §3.2.6.A.3.e.**

184 **§12.4.10. ~~Utilities, minor~~**

185 The exterior appearance of any building associated with ~~minor~~ utilities shall be in keeping with
186 the character of the neighborhood in which it is located.

188 **Article 18. Definitions**

189 **§18.2. General Terms Defined**

190 **Flood wall. An artificially erected, freestanding barrier typically consisting of steel, masonry, and/or**
191 **concrete used in an area of special flood hazard that is designed and engineered to prevent the**
192 **encroachment of water for the purpose of protecting structures and/or property.**

Underground detention vault (Cardinal Elementary)



Underground detention vault (Cardinal Elementary)



Detention ponds



Wet pond



Dry pond

Pumping stations



Examples shown are
wastewater pumping stations
(14 in the County)

Overland relief measures (Swales and drainage flowpaths)



Floodwalls



Flood walls along Four Mile Run and Lower Long Branch

Miscellaneous SWM facilities



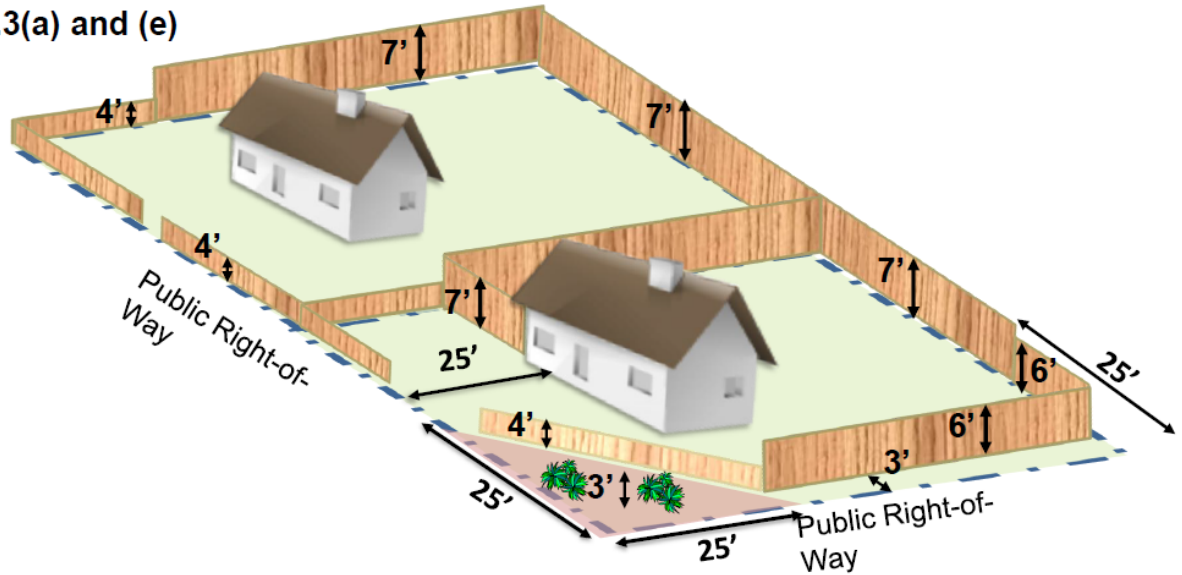
A "green street" on Larrimore St



Sparrow Pond stormwater treatment facility

PLACEMENT, SETBACK, & MAXIMUM HEIGHT FOR FENCES AND WALLS

Section 3.2.6.A.3(a) and (e)



Section 3.2.6.A.3.(a) and (e) state, in part:

➤ A fence or wall along the rear lot line or along a side lot line to the rear of the required setback line may be erected to a height not exceeding seven (7) feet; provided, further, that

➤ In side and rear yards of corner lots, fences up to six (6) feet in height may be erected in the required setback in order to permit enclosure of the side and rear yards for privacy so long as the requirements of Section 3.2.6.A.4, relating to vision clearance are maintained.

➤ No fence exceeding four (4) feet in height shall be placed within three (3) feet of any public right-of-way.

➤ On any corner lot in an "R" or "RA" District there shall be no planting, structure, retaining wall, fence, shrubbery or obstruction to vision between a height of three (3) feet and a height of ten (10) feet above the curb level within the triangle formed by the street right-of-way lines and a line connecting said street lines twenty-five (25) feet from their intersection. On any corner lot in a "C" or "M" District, no building or obstructions shall be permitted between a height of one (1) foot and a height of ten (10) feet higher than the curb level within the triangle formed by the street right-of-way lines and a line connecting said street lines ten (10) feet from their intersection.