ZAC
Zoning Advisory Committee

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MEMORANDUM

To: Zoning Commission of the District of Columbia

From Zoning Advisory Committee (ZAC)

Re: Changing the Zoning Regulations to allow and encourage, but not mandate, use of pervious paving for certain parking and related facilities by amending 11 DCMR §§ 2301.1(a), 2117 10, 2117 4, 2117 3, 199, 2403.9(h)

Date: November 22, 2004

The ZAC's Subcommittee on Pervious / Impervious Surfaces, consisting of David J Bardin, Esquire (chair), George R Clark, Esquire, and Barbara Zartman, prepared six proposed amendments and submitted them to the full ZAC for discussion on 14 October 2004 In preparing these proposals, the Subcommittee consulted experienced persons in DC Government (including DDOT, DOH, and OP), in governments of neighboring jurisdictions, engineers and architects in the private sector, specialists in low impact development techniques, vendors of pervious paving technologies, and examined codes, regulations, and guidance documents of several jurisdictions

The Subcommittee modified its initial proposals in light of full ZAC discussion on 14 October and 10 November 2004 Thereupon, the full ZAC voted to submit these six recommendations to the Zoning Commission (ZC) The vote was unanimous, with nine members in attendance.

Issue Addressed

The DC Zoning Regulations, by requiring that only "impervious" materials be used to pave (or in connection with) parking lots, open parking spaces, and driveways to parking spaces, have established an absolute bar against use of pervious materials See 11 DCMR §§ 2117 3, 2117,4, 2117 10, and 2303 1(a) This bar -- now almost 50 years old -- is outmoded

Expanding use of pervious materials (where appropriate, considering such factors as traffic load and undersoil), either alone or together with rain gardens, could be environmentally desirable New pervious materials are entering this dynamic market. Vendor displays at September's EPA-funded stormwater conference, sponsored by the Metropolitan Washington Council of Governments (MWCOG) and Prince George's County in College Park, MD ("Putting the LID on Stormwater Management"), included pervious paving materials. Architects and engineers should be freed to select pervious materials without violating the Zoning Regulations.

ZONING COMMISSION
District of Columbia
CASE NO.04-34
EXHIBIT NO.1

Proposed Approach

Accordingly, the ZAC proposes removal of the bar and adoption of a policy of allowing and encouraging (but not mandating) use of pervious materials -- either alone or together with "bioremediation" rain gardens To these ends, we recommend amendments of six of the Zoning Regulations, as follows.

P-1 Amending 11 DCMR § 2303.1(a) to allow "pervious" materials for paving parking lots

P-2 Amending 11 DCMR § 2117 10 to allow "pervious" materials for paving open parking spaces

P-3 Amending 11 DCMR § 2117.4 to allow "pervious" private driveways to parking spaces -- including driveways connecting to streets and alleys (but not applicable to the streets or alleys themselves)

P-1 and P-2 would authorize DOH, as well as DDOT, to approve additional categories of paving materials (a recommendation that grows out of consultation with these two Departments)

- To establish a performance standard of structural strength at least sufficient to support an AASHTO H-20 load (that is, a private motor vehicle), and

- To allow "open-face paving block over a pervious base" (a generic description, avoiding names of such proprietary products as "grasscrete" and "turf block", which are listed in regulations of other jurisdictions), as paving material in addition to "bituminous, concrete, or brick"

P-3 would be brought into line with P-1 and P-2 in order to address concerns as to use of gravel near the public right of way

P-4 Amending 11 DCMR § 2117 3 to allow "pervious" as well as impervious striping.

P-5 Adding to 11 DCMR § 199 definitions of "Low impact design (LID) practice" and "Rain garden"

P-6 Amending 11 DCMR § 2304 9(h) to recognize pervious paving and rain gardens as PUD amenities

Regulations to Be Left Unchanged Deliberately

The ZAC is not proposing any changes in "impervious" requirements for loading docks (Chapter 22) or queuing lanes for parking lots (11 DCMR § 2304 5)

Nor does the ZAC propose any changes in overlays (Chapter 15) which were adopted starting in 1992 for land use regulation purposes -- restricting "impervious surface coverage" to 50% of a lot in certain overlay districts -- decades after the independent, city-wide zoning mandates that all paving materials for all parking spaces must be "impervious "

DDOT and DOH Support

The Departments of Transportation (DDOT) and Health (DOH) have contributed to analysis of the issue and development of this proposal They support this approach Consultation with them led to a positive recommendation that *both* be authorized to approve additional new paving materials, in order to open doors to use of environmentally-desirable technologies

Typically, parking lots will be reviewed by DOH and access driveways crossing the public space by DDOT, because of the following circumstances

- The Zoning Regulations govern only within the property line -- and not in the public right of way
- DDOT responsibilities focus on the public right of way (both between curb lines and in the "public parking" between curb and the property line).
- DOH stormwater regulations govern inside the property line of all properties (even federally-owned properties, exempt from the Zoning Regulations)
- DDOT, which is now in the process of revising both its Standard Specifications for Highways and Structures (the "Red Book") and its Design and Engineering Manual, is receptive to reflecting (and cross referencing) state of the art pervious paving concepts in these revisions However, revisions come every few years, and technology may expand more rapidly
- So apart from what the Zoning Regulations prescribe (and DCRA administration of them addresses), the goal might be a system which counts on certification by professional engineers to protect property owners as to structural adequacy (e g , to support H-20 vehicles) and hydrologic suitability to the site with the DOH regulatory scheme as to stormwater and the DDOT regulatory scheme as to public space (rather than the Zoning Regulations) allowed to take primary responsibility

Further Discussion

The U.S Environmental Protection Agency has observed "The use of permeable pavements is an effective means of reducing the percent of imperviousness [which reduces stream, lake and wetland quality] in a drainage basin Porous pavements are best suited for low traffic areas, such as parking lots and sidewalks Permeable pavements allow stormwater to infiltrate into underlying soils promoting pollution treatment and recharge, as opposed to producing large volumes of rainfall runoff requiring conveyance and treatment " US EPA Office of Water, Low Impact Development (LID), Oct 2000, EPA-841-B-00-005

Loudoun County encourages (but does not mandate) appropriate uses of pervious paving in its Facilities Design Manual·

> "3 Gravel, grasscrete or other suitable materials may be used for access and parking areas within the A-3, A-10, and A-25 Zoning Districts The parking

areas shall be well drained with defined travel aisles and designated parking bays.

"4 The County permits and encourages the use of pervious materials, rain gardens and other low-impact design options, in accordance with Chapter 5 of this manual to satisfy the parking and associated improvement requirements set forth in this section and the Zoning Ordinance "

Section 4 400 PARKING GEOMETTRIC STANDARDS, Subsection A General Criteria Section 5 200 references, as recommended for the low-impact design alternative, "Low-Impact Development Design Strategies, an Integral Design Approach" (Jan. 2000) prepared by Prince George's County, MD, and the MD Department of Environmental Resources [posted at www lowimpactdevelopment org/ftp/LID_National_Manual pdf]

A recent ordinance of Duck, North Carolina describes allowable pervious pavings generically, as follows (for one or two-family residences and for all other units, respectively)

(c) Required parking spaces shall be graded and improved with asphalt, concrete, gravel, or porous paving as approved by the zoning administrator or an open-face paving block over a pervious base, not to include clay, provided the open-face paving block is equivalent to Turfstone™ with regard to compressive strength, density, absorption and durability

(d) Surfacing All parking lots shall be improved with asphalt, concrete, pavers, porous pavement or similar dust proof surface

Article V (Off-street parking and loading), Sections 39(c), one and two-family residences) and 40(d), all other units

In our Metropolitan region, some jurisdictions (e g , Fairfax and Prince George's Counties) allow pervious paving of parking spaces only on an exceptional, case-by-case basis -- as if D C Zoning Regulations called upon DCRA's zoning administrator or the BZA to approve each and every use of pervious paving materials for parking spaces The ZAC proposals avoid such an approach in favor of generic permission in the Zoning Regulations for some pervious pavings and authority to DDOT and DOH (not DCRA or the BZA) to expand those allowable categories of materials either generically or by trade name, across the board or case-by-case

Sincerely,

Jerrily R. Kress, FAIA
Moderator
Zoning Advisory Committee

Enclosures

DISTRICT OF COLUMBIA ZONING ADVISORY COMMITTEE

c/o Office of Zoning · 441 4th Street, NW, Ste. 210-S · Washington, DC 20002

CODE CHANGE PROPOSAL FORM **TITLE 11 DCMR ZONING REGULATIONS**

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CHAPTER/SECTION NO.	2303 1(a)			SUBCOMMITTEE AMENDMENT NO.	P-1		
PROPOSING SUBCOMMITTEE	Pervious	CHAIR	David Bardin	PHONE	857-6089	E-mail	bardind@arentfox co
DATE. OF PROPOSAL	13 Oct 2004	ZAC PRESENTATION	14 Oct 2004	ZAC APPROVAL	10Nov 2004		

CHECK ONE ☒ ***Revise section to read as follows:*** ☐ ***Delete section and substitute the following:***
☐ ***Add new section to read as follows:*** ☐ ***Delete section without substitution.***

TYPE ALL TEXT IN 12-POINT TIMES NEW ROMAN FONT
~~***LINE THROUGH TEXT TO BE DELETED***~~ *(highlight text, under Format, click font and check strikethrough)*
UNDERLINE TEXT TO BE ADDED

CHAPTER 23 GARAGES, CAR PORTS, PARKING LOTS, AND GASOLINE SERVICE STATIONS

2303 PARKING LOTS

2303.1 A parking lot in any district shall conform to the following provisions

(a) All areas devoted to driveways, access lanes, and parking areas shall be paved and maintained with bituminous, concrete, or brick materials, **or open-face paving block over a pervious base sufficient to support an AASHTO H-20 load,** or a combination of these materials, or other material approved by the D.C. Department of Transportation **or the D.C. Department of Health** as structurally equivalent or better, that form an all-weather **pervious or** impervious surface, and that are a minimum of four inches (4 in) in thickness **Although not mandated, appropriate use of pervious materials to pave parking lots is allowed and encouraged as part of low-impact design techniques which may also include rain gardens and other measures not inconsistent with Department of Health stormwater management requirements.**

JUSTIFICATION OF CHANGE:

Encourages environmentally-desirable, dynamic technologies by removing a Zoning Regulation bar to use in parking lots of new *materials* which may help reduce runoff (particularly important in combined sewer areas of the City), recharge ground water, filter contaminants Also eliminates possible conflicts between the present Zoning Regulation prohibitions and Department of Health stormwater management policies in some cases. Does not affect *land use* restrictions on impervious surface coverage.
► Loudoun County Facilities Design Manual addresses these issues. "3 Gravel, grasscrete or other suitable materials may be used for access and parking areas within the A-3, A-10, and A-25 Zoning Districts The parking areas shall be well drained with defined travel aisles and designated parking bays. . 4. The County permits and encourages the use of pervious materials, rain gardens and other low-impact design options, in accordance with Chapter 5 of this manual to satisfy the parking and associated improvement requirements set forth in this section and the Zoning Ordinance." Section 4.400 PARKING GEOMETRIC STANDARDS, Subsection A General Criteria

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Revised 04/28/2004

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CODE CHANGE PROPOSAL FORM **TITLE 11 DCMR ZONING REGULATIONS**

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CHAPTER/SECTION NO.	2117 10			SUBCOMMITTEE AMENDMENT NO.	P-2		
PROPOSING SUBCOMMITTEE	Pervious	CHAIR	David Bardin	PHONE	857-6089	E-mail	bardind@arentfox co
DATE: OF PROPOSAL	13 Oct 2004	ZAC PRESENTATION	14 Oct 2004	ZAC APPROVAL	10Nov 2004		

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CHAPTER 21 OFF-STREET PARKING REQUIREMENTS

2117 ACCESS, MAINTENANCE, AND OPERATION

2117.10 All open parking spaces, including access aisles, driveways, and ramp areas shall be paved and maintained with bituminous, concrete, or brick materials, **or open-face paving block over a pervious base sufficient to support an AASHTO H-20 load,** or a combination of these materials, or other materials approved by the D C Department of Transportation **or the D.C. Department of Health** as structurally equivalent or better, that form an all-weather **pervious or** impervious surface and that are at least four inches (4 in.) in thickness. **Although not mandated, appropriate use of pervious materials to pave open parking spaces is allowed and encouraged as part of low-impact design techniques which may also include rain gardens and other measures not inconsistent with Department of Health stormwater management requirements.**

JUSTIFICATION OF CHANGE:

Encourages environmentally-desirable, dynamic technologies by removing a Zoning Regulation bar to use in open parking spaces of new *materials* which may help reduce runoff (particularly important in combined sewer areas of the City), recharge ground water, filter contaminants Also eliminates possible conflicts between the present Zoning Regulation prohibitions and Department of Health stormwater management policies in some cases. Does not affect *land use* limits on impervious surface coverage ▶Loudoun County Facilities Design Manual addresses these issues: "3. Gravel, grasscrete or other suitable materials may be used for access and parking areas within the A-3, A-10, and A-25 Zoning Districts. The parking areas shall be well drained with defined travel aisles and designated parking bays 4 The County permits and encourages the use of pervious materials, rain gardens and other low-impact design options, in accordance with Chapter 5 of this manual to satisfy the parking and associated improvement requirements set forth in this section and the Zoning Ordinance " Section 4 400 PARKING GEOMETRIC STANDARDS, Subsection A General Criteria.

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CHAPTER/SECTION NO	2117 4			**SUBCOMMITTEE AMENDMENT NO.**	P-3		
PROPOSING SUBCOMMITTEE	Pervious	**CHAIR**	David Bardin	**PHONE**	857-6089	**E-mail**	bardind@arentfox co
DATE: OF PROPOSAL	13 Oct 04	**ZAC PRESENTATION**	14 Oct. 2004	**ZAC APPROVAL**	10Nov 2004		

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CHAPTER 21 OFF-STREET PARKING REQUIREMENTS

2117 ACCESS, MAINTENANCE, AND OPERATION

2117 4 Except as provided in §§ 2117.5 and 2117 6, each required parking space shall be accessible at all times directly from improved streets and alleys via graded and unobstructed private driveways that form an all-weather **pervious or** impervious surface **of bituminous, brick, or concrete materials, or open-face paving block over a pervious base sufficient to support an AASHTO H-20 load, or a combination of these materials, or other material approved by the D.C. Department of Transportation or the D.C. Department of Health** Improved streets and alleys providing access to required parking spaces shall have a minimum width of ten feet (10 ft) and be paved in compliance with the standards of the D C. Department of Transportation **Although not mandated, appropriate use of pervious materials for private driveways is allowed and encouraged as part of low-impact design techniques which may also include rain gardens and other measures not inconsistent with Department of Health stormwater management requirements.**

JUSTIFICATION OF CHANGE:

Encourages environmentally-desirable dynamic technologies by removing a Zoning Regulation bar to use for private driveways Pervious materials may help reduce runoff (particularly important in combined sewer areas of the City), recharge ground water, and filter contaminants. Amendments would eliminate possible conflicts between the present Zoning Regulation prohibitions and Department of Health stormwater management policies in some cases.
► Loudoun County Facilities Design Manual addresses these issues "3 Gravel, grasscrete or other suitable materials may be used for access and parking areas within the A-3, A-10, and A-25 Zoning Districts. The parking areas shall be well drained with defined travel aisles and designated parking bays 4 The County permits and encourages the use of pervious materials, rain gardens and other low-impact design options, in accordance with Chapter 5 of this manual to satisfy the parking and associated improvement requirements set forth in this section and the Zoning Ordinance " Section 4 400 PARKING GEOMETRIC STANDARDS, Subsection A General Criteria.

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CHAPTER/SECTION NO.	2117 3			**SUBCOMMITTEE AMENDMENT NO.**	P-4		
PROPOSING SUBCOMMITTEE	Pervious	**CHAIR**	David Bardin	**PHONE**	857-6089	**E-mail**	bardind@arentfox co
DATE: OF PROPOSAL	13 Oct 2004	**ZAC PRESENTATION**	14 Oct. 2004	**ZAC APPROVAL**	10Nov 2004		

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CHAPTER 21 OFF-STREET PARKING REQUIREMENTS

2117 ACCESS, MAINTENANCE, AND OPERATION

2117 3 All required parking spaces shall be clearly striped and lined according to the dimensions specified in § 2115. Durable **striping** materials that are all-weather **pervious (if appropriate) or** impervious shall be used Striping shall be maintained for as long as the parking spaces requiring the striping are in existence

JUSTIFICATION OF CHANGE:

Universally impervious *striping* of parking lots or open parking spaces that were appropriately paved with pervious materials may clash with (and even foil) selection of paving materials. See justifications for Subcommittee Amendments Nos P-1 (regarding 11 DCMR 2303 1(a)) and P-2 (regarding 11 DCMR 2117 10)

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CODE CHANGE PROPOSAL FORM **TITLE 11 DCMR ZONING REGULATIONS**

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CHAPTER/SECTION NO	199			**SUBCOMMITTEE AMENDMENT NO.**	P-5		
PROPOSING SUBCOMMITTEE	Pervio	**CHAIR**	David Bardin	**PHONE**	857-6089	**E-mail**	bardind@arentfox co
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CHECK ONE ☐ ***Revise section to read as follows:*** ☐ ***Delete section and substitute the following:***
☒ ***Add new DEFINITIONS to section to read as follows:*** ☐ ***Delete section without substitution.***

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SECTION 199 DEFINITIONS Add two new definitions to read as follows

Low-impact design (LID) practices – a methodology that uses natural site design techniques that store, infiltrate, evaporate, treat and detain runoff in close proximity to where the runoff is generated, through small site features such as rain gardens. "Low-Impact Development Design Strategies, an Integral Design Approach", dated January 2000, and prepared by Prince George's County, Maryland and the Maryland Department of Environmental Resources is the recommended reference for this design alternative [www.lowimpactdevelopment.org/ftp/LID_National_Manual.pdf]

Rain garden – bioretention project with plantings that collect and filter runoff from parking lots to reduce storm flooding and keep pollutants from entering local streams and rivers Rain gardens are an attractive, low-impact and relatively low-cost way to protect our environment

[N B. For half a century, the Zoning Regulations used, but never defined, the term "impervious materials " So we do not define its antonym, "pervious" materials (In 1992, a *land use overlay* introduced and defined "impervious surface coverage" and "impervious surface" – but not *materials*)]

JUSTIFICATION OF CHANGE:

These new definitions support proposed amendments to subsections 2117 3, 2117.4, 2117.10, 2303.1(a), and 2403 9(h)
▶ The definition of "Low-impact design (LID) practice" is adapted from the Loudoun County Facilities Design Manual, Section 5 100, which, like the proposed amendments, permits and encourages – but does not mandate – use of pervious materials and other LID techniques (in contrast to Montgomery County which does not regulate materials used to pave privately-owned parking facilities at all and Fairfax County or Prince Georges County which require impervious or "dustless" paving unless an administrative official rules otherwise, case by case)
▶ The definition of "Rain garden" is taken from Architect of the Capitol's signage on the 100 block of D Street, NE, at the rain garden attached to the Capitol parking lot on north side of D Street, NE, east of 1st Street, NE (between the Hart SOB and Union Station)

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CHAPTER/SECTION NO.	2403 9(h)			**SUBCOMMITTEE AMENDMENT NO.**	P-6		
PROPOSING SUBCOMMITTEE	Pervious	**CHAIR**	David Bardin	**PHONE**	857-6089	**E-mail**	bardind@arentfox co
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2403 PUD EVALUATION STANDARDS

2403 9 Public benefits and project amenities of the proposed PUD may be exhibited and documented in any of the following or additional categories·

* * *

(h) Environmental benefits, such as stormwater runoff controls, **use of low-impact design techniques which may include pervious surfaces and rain gardens,** and preservation of open space or trees;

JUSTIFICATION OF CHANGE:

Recognizes environmentally-desirable, dynamic technologies as PUD amenities

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