The NoMa Streetscape Guidelines provide a set of parameters for the design and use of the right-of-way in the core of the NoMa neighborhood. For several years, NoMa has had two governing documents that provide guidance on how the streetscape should be planned: the NoMa Vision Plan and Development Strategy of 2006 and the NoMa Public Realm Design Plan of 2012. The NoMa Streetscape Guidelines takes the best of these guidelines and adds new elements that will enhance the health, use, and vitality of public space in NoMa.

The NoMa Streetscape Guidelines will fulfill a goal of the 2012 NoMa Public Realm Design Plan to transform each street into a linear park space. Urban centers are frequently inhospitable to trees and vegetation. But, by providing adequate, aerated soil for street trees, these Guidelines will enable the development of lush, healthy street trees and maximize stormwater retention, while the recommended palette of materials will create durable, comfortable places that are urban, civic, and bustling.

The study area that these Guidelines cover includes six primary streets in Northeast DC, running north-south from K Street NE to N Street NE and east-west from North Capitol Street to 2nd Street NE. Patterson Street NE is the only minor street to be included. The Guidelines are applicable not only for these specific streets but other streets in NoMa with similar right-of-way (ROW) dimensions and characteristics.

The specific streets studied establish functional hierarchy, as follows:

**First Street NE** is NoMa’s Main Street and serves as the backbone for the area. Due to its central location, north-south orientation, wide ROW, and broad sidewalks, First Street will be the best example of a great street in NoMa.

**K Street NE** is NoMa’s widest ROW, which will allow it to incorporate the Guidelines to the maximum extent possible. Thus, it has the potential to become a lush, linear park that can tie both First and 2nd Streets together. K Street is a critical cross street, connecting secondary streets and adjacent neighborhoods to the east and west of NoMa.

**L, M, and N Streets NE** are NoMa’s most intensely mixed-use streets. They also serve as secondary collector streets that tie NoMa to the east and west portions of the city.

**2nd Street NE** serves primarily as the north-south link along the rail yard. It is narrow, and often without setbacks, so it is the most challenging of the streets for implementing the goals of the Guidelines.

**Patterson Street NE** is a very narrow minor street within NoMa. It serves the same basic function as M and N Streets NE, but with reduced capacity and with parking on both sides of the street.

In the following pages, you will find a set of guidelines for creating great streets in NoMa. Supplemental materials include documentation of the work that was completed to arrive at these guidelines; an inventory of the existing conditions on these streets; and an evaluation of current conditions.
Great Streets

Streets are our interface with the city. The experience of the street shapes our understanding and relationship with a place. According to Allan Jacobs, a great street is a “desirable place to be, to spend time, to play, to work, at the same time that it markedly contributes to what a city [or neighborhood] should be.”

Like a park, a great street is physically comfortable, with respite of shade and seating. It feels safe and secure, with adequate lighting and activity at night. It is accessible to all, inviting anyone to occupy it and interact with it. It promotes responsible and sustainable use of resources, including stormwater and waste management. A great street is, in essence, a linear urban park.

Guideline Goals:

- Encourage growth of a large, healthy canopy
  - Wherever possible, provide the maximum soil volumes so that trees planted in each block can grow to full maturity. Large trees require 1500 cubic feet (CF) of soil, medium trees 1000CF, and small trees 800CF. This single objective will contribute most significantly to the enhancement of the street environment by providing dappled light and shade for maximum comfort.

- Enliven street activity
  - Provide social spaces for outdoor gathering and dining. The incorporation of café seating and other informal movable seating areas are also highly recommended to enhance the quality of the street life.

- Provide accessible and easily walkable pedestrian paths
  - Maintain the minimum required DDOT sidewalk widths. These Guidelines promote a streetscape concept that is no longer bifurcated, but a single generous walkway zone, to provide flexibility and to establish social spaces.

- Promote sustainability of urban resources
  - Permeable pavements allow efficient infiltration of stormwater on site. When combined with systems such as Silva cells (or other suspended pavement systems) that maximize soil volumes underneath pavement for root development, a symbiotic relationship between tree growth and stormwater management is enabled.

- Fulfill the Districts Infrastructure Standards
  - Maximizing soil volumes will better enable each street and block to meet its stormwater management responsibilities.
GUIDELINES
GENERAL SUMMARY

**Materials & Furnishings**

**Building Edges**
All streetscape designs shall take into account the adjacent ground floor elevations and uses. Retail uses and residential bay windows may project up to 4’ within public space, so it is important that the minimum DDOT walkway widths for each designated street take these projections into account. Building entrances shall be flush, and sidewalk cross slopes shall be in conformance with ADA guidelines. Residential windows and spaces should be separated or buffered with landscaping or planting beds so that they are not directly accessible from the streetscape sidewalks.

**Utilities**
It is critical to the successful layout of the streetscape block, as well as street tree spacing and rhythms, that subsurface utilities and easements, particularly those owned by DC Water, are identified, located, and properly surveyed. Trees and furnishings shall maintain the minimum required setbacks from easements, fire hydrants, and streetlights.

**Typical Block**
Laybys are prohibited by DDOT with exceptions for hotels where no on-street parking exists. Step-out zones along tree boxes are only required where there is on-street parking. Maximum and minimum design configurations are defined for the four street types within the Guidelines. This will allow for a range of design possibilities.

**Max & Min**
Maximum and minimum configurations are provided for the four street types within the Guidelines. Two options are presented within each maximum configuration: one that maximizes paving surface area for pedestrian movement and gathering, and one that favors planting surface area for stormwater and low impact development (LID) requirements.

Both configurations delineate the areas and amount of soil volumes. Each typical block also provides five diagrams that show the relationships between tree canopy and lighting layout, soil volumes, materiality, planting, and accents. In addition, detailed plans and typical sections are presented for each street type.

These Guidelines are applicable not only for these specific streets, but other streets within NoMa with similar ROW dimensions and characteristics.

**Street Trees**

**Existing Trees**
All existing trees within NoMa project area should be evaluated for health and vigor. Those in good to excellent condition should be preserved and incorporated into the palette specified for the street. During construction, every effort should be made to protect and preserve existing healthy trees from damage.

**Soils**
Soil volumes for large canopy trees require 1500CF (cubic feet) at a 3’ depth. In order to accommodate large trees with this level of soil volume, continuous soil panels or tree trenches are often required.

These Guidelines recommend a compromise that maximizes soil volumes with the use of permeable pavers over a suspended pavement system, such as “Silva cells” to create areas that can support both street life and street trees.

**Spacing**
Street trees shown on the following typical plan diagrams range from 30’ to 40’ on center (OC). DDOT Urban Forestry Administration (UFA) recommendation is 30’ OC for both large and medium sized canopy trees, in order to best work with the typical street lighting module. The important attribute is to plant them so the tree canopies will eventually grow together to provide a continuously shaded street, creating the quality of a linear park. DDOT UFA recommends 20’ for the spacing of all small and understory plantings.

**Size**
Street trees should be installed at 2.5”-3” caliper unless otherwise requested by DDOT.

**Staking**
Staking of the smaller sized trees is recommended. Generally, larger trees do not require staking unless they are in a very windy area or have persistent leaves that can act as sails during the winter months.

**Tree Boxes**
Each planter bed should be edged on three sides with the DDOT typical edge restraint detail. The rail should be approximately 18” high and contemporary in style. (Examples are shown in Materials Matrix, p. 7.)

**Understory Trees & Groundcovers**
Planting beds should be planted to create a lush, full effect. Plants need to be tolerant of a wide range of soil and moisture conditions and should be selected for foliage and textural contrasts. Plants should also be native, non-invasive, and low-maintenance varieties and species. Suggested types include the following shrubs: Virginia Sweetspire (Itea virginica), and native groundcovers, such as lily turf (Liriope muscari) and sedges (Carex sp.).
Raised Planters

In some instances and locations within the streetscape design, the desire to use raised planting beds should be considered. Raised planters are encouraged in the second row of trees and may be used along with seat walls to help separate seating areas from busy intersections, pedestrian movements, or building entries to create a park-like setting. Raised planters allow the branches of small multi-stemmed trees to be raised above pedestrian walkways. It is recommended that benches be segmented or placed in a manner that will allow sheet flow run-off from the sidewalks to enter into permeable pavings or soil areas of planting or tree beds.

Raised planters are considered non-standard DDOT treatments and will be reviewed on a case-by-case basis. If approved, they will require a maintenance agreement.
It should be noted that the use of any non-standard material will require approval by DDOT on a case-by-case basis. Approvals will also require the applicant to record a maintenance agreement with the District inclusive of any work required due to any unresolved issues as a result of utility improvements.

**DDOT Material Standards**

DDOT has set basic material standards for their street design and development, which do not require special review or approvals. The standard or minimum plans shown for each street type within NoMa may use DDOT standard materials and techniques. The maximum plans recommend other materials and techniques that are outside DDOT standards.

**Minimum Plans: Standard DDOT Materials**

- **Pavings**
  - The Guidelines recommend the continued use of DDOT standard exposed aggregate paving, established in the 2012 Guidelines, as the dominant non-permeable paving type for use within the NoMa BID. In addition, the standard 3’x3’ scored concrete paving may also be used to contrast and accent the exposed aggregate paving where appropriate. Curbs, gutters, and crosswalks will also utilize standard DDOT materials.

- **Furnishings**
  - Standard DDOT furnishings may be used for the minimally acceptable streetscape plans within NoMa, as shown on p. 7.

**Maximum Plans: Standard & Non-Standard DDOT Materials**

- **Pavings**
  - In addition to the Standard DDOT materials recommended in the minimum plans, the maximum plans introduce other materials for enriching the palette and functionality of the streetscape design. The Guidelines recommend using 4”x8” concrete unit permeable pavers (comparable to Hanover® Prest® with Tudor® finish in gray), over the horticultural soil areas to aid in SWM and supplement tree moisture levels and soil nutritional needs. While these pavers are considered non-standard DDOT materials, these have been approved for use throughout the District.

- **Furnishings**
  - The Guidelines build on the current materiality found in NoMa. (Examples are shown in the Materials Matrix, p. 7.) The development and use of the stone Burnham benches, to extend the character and motif of the rail yard throughout NoMa, are also encouraged.

- **Soil & Plantings**
  - These Guidelines encourage the use of suspended pavement systems (see p. 9) for the long-term benefits of trees and SWM goals. However, there are potential conflicts with DC Water utility easements. DOEE and UFA would like to see their use expanded for the benefit and improvement of trees and soils, however, there are potential challenges that arise from the presence of DC water utility easements.

- **Lighting & Special Features**
  - The use of special lighting such as catenary lights, tree up-lights, or other decorative lights is encouraged. Automatic irrigation systems to help with tree and plant material establishment and maintenance should also be considered.
### MATERIAL MATRIX

Recommended materials for use in maximum and minimum scenarios.

#### PAVING
- Exposed Aggregate
- Permeable Pavers
- Suspended Pavement

#### PLANTING
- UFA MUST APPROVE SPECIES

#### SEATING
- Burnham Wall
- Burnham Bench

#### GUIDELINES

**PROPOSED STREET COMPOSITION & MATERIALS**

<table>
<thead>
<tr>
<th>Street</th>
<th>Dimensions</th>
<th>Materials</th>
<th>Trees &amp; Furnishings</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td></td>
<td>Total ROW</td>
<td>Building to face of</td>
<td>Street Light</td>
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<tr>
<td></td>
<td></td>
<td>Cart Path</td>
<td>Step Out</td>
</tr>
<tr>
<td></td>
<td>Maximum Scenario</td>
<td>Street Light</td>
<td>Walk</td>
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<td></td>
<td>Minimum Scenario</td>
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<tr>
<td></td>
<td>Minimum Scenario</td>
<td>Street Light</td>
<td>Walk</td>
</tr>
<tr>
<td>1st Street</td>
<td>110' 35' 40' 2'6&quot; 21'8&quot; 31'8&quot; 2141 CF 10' 21'8&quot; 1457 CF 5'* DDOT standard Exposed Aggregate &amp; Permeable Pavers Exposed Aggregate Granite Brick 35' curb-side row large understory trees 35' curb-side row medium -</td>
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<tr>
<td>2nd Street</td>
<td>60' 12'10&quot; 30' 12' 1008 CF 4' 8' 747 CF - DDOT standard Permeable Pavers Exposed Aggregate Granite Brick 25' curb-side row medium - 50' curb-side row medium -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L, M &amp; N Street</td>
<td>90' 30' 30' 2'6&quot; 16'8&quot; 26'8&quot; 1881 CF 10' 16'8&quot; 759 CF - DDOT standard Exposed Aggregate &amp; Permeable Pavers Exposed Aggregate Granite Brick 35' curb-side row large - 35' curb-side row medium -</td>
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</tr>
<tr>
<td>K Street</td>
<td>150' 50' 50' 2'6&quot; 36'8&quot; 46'8&quot; 1923 CF 15'4&quot; 31'4&quot; 1612 CF 5'* DDOT standard Exposed Aggregate &amp; Permeable Pavers Exposed Aggregate Granite Brick 35' double row large understory trees 35' curb-side row large -</td>
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</tr>
</tbody>
</table>

*Minimum space provided for the tenant zone is 5 feet. Additional space (a minimum of 5 feet) will be added to the tenant zone where buildings are setback on the groundfloor.*
Recommendations for the streetscapes are divided into four groups, based on the width of the street right-of-way (ROW):

- **60’ ROW: 2nd Street NE**
- **90’ ROW: L, M & N Streets NE**
- **110’ ROW: First Street NE**
- **150’ ROW: K Street NE**

Trees are recommended based on their potential size at maturity, corresponding to the available soil volumes. Based on the District’s UFA requirements, large trees require 1200-1500 CF of soil, medium trees 800-1000 CF, and small trees 600-800 CF.

The preferred horticultural characteristics for street trees within NoMa shall be based on the following general selection criteria, and for each specific tree type:

### General

- 4 to 8 USDA Plant Hardiness Zones
- Adaptable to a variety of soil conditions, pH 6.6
- Native or indigenous, if possible
- Relatively disease free or resistant cultivar
- Strong, withstands winds and ice
- Easy to transplant

### Canopy Tree

- Deciduous
- Size: 50-60’+ Park or Campus type tree
- Long lived, 100 years +
- Moderate rate of growth

### Small Tree

- Deciduous
- Size: 20-30’+/
- Moderate rate of growth
- Two seasons of interest, with good Fall color

### Medium Tree

- Species
- Based on these criteria, it is recommended to select a primary dominant species to provide a uniform canopy and character to the street, but also to make sure that each street is composed of a diverse mix of trees. In these instances, a variety of oaks (Quercus sp.) can be intermixed without adversely impacting the character of the canopy. For example, Overcup Oaks (Quercus lyrata) can be interspersed with Swamp White Oaks (Quercus bicolor) on the same block. In addition, the overall dominant tree color shall be within the light to dark green ranges when the leaves are fully mature during the growing season. No hybrid varieties with yellow, red, or marooned colored leaves are recommended. Trees with good fall color are also a desirable trait for tree selection.

- On 2nd Street, Delaware Ave and Patterson Street NE, a mixed tree planting from the palette will give each block its own identity and yield a more diverse tree canopy in these sections of NoMa.
Streetscapes that incorporate suspended pavements for improved soil and soil volumes are recommended by these Guidelines. To be eligible for additional Stormwater Management (SWM) credits, the following criteria must be met:

1) Tree pits must have water draining to them by either surface sheet flows or infiltration (through permeable paving or other approved means) to capture a contributing drainage area,

2) Soils associated with the trees must have ponding or water collection area, and

3) Soils below the planting areas must have good hydraulic infiltration rates and/or be underdrained.

If all three criteria are met, then the tree planting area will have similar SWM characteristics to permeable pavements and/or bioretention areas and be eligible for SWM credits as such.

DOEE will review all plans on a case-by-case basis to allocate credits appropriately.
GUIDELINES
TYPICAL BLOCK

STREET TYPES

N Street
M Street
L Street
K Street

1ST Street
2ND Street
L, M & N STREET
10TH STREET
2ND ST, DELAWARE AVE & PATTERTON STREET

FIRST STREET
K STREET
L, M & N STREET
2ND ST, DELAWARE AVE & PATTERTON STREET
As NoMa’s central spine and connector, First Street NE can be the catalyst for the development of NoMa’s linear park system. Given its total width and the minimum DDOT pedestrian zone of 10’, this street has the potential to incorporate all of the design goals.

Minimum Plan
This plan delineates the minimum soil volume required for the establishment of medium sized trees. In order to obtain acceptable minimal canopy coverage, at least seven trees will need to be planted on a typical block face. Standard DDOT exposed aggregate concrete is the primary paving material proposed for a block meeting the minimum plan.

Maximum Plans
Two options for maximum growth are delineated for First Street NE. For both options, soil volumes are proposed that will allow the establishment of seven to eight large canopy trees as well as understory trees within full beds of lush plantings. The establishment of a single row of large species street trees spaced 35’ on center along with understory trees will not only promote the street as a linear park but also provide numerous opportunities for the creation of intimate spaces.

Max. Scenario 1
This option prioritizes more paved surface area for pedestrian movement or social gathering over planting areas. In order to accomplish this and maintain the soil volumes to accommodate large street trees, we recommend the use of permeable pavers placed on Silva cells (or other suspended pavement systems). This system provides growing conditions that support larger and healthier trees. Pairing suspended pavement systems with maximum soils will also serve to fulfill DOEE SWM requirements, resulting in a win-win combination.

Max. Scenario 2
Scenario 2 maximizes the amount of planting area within a typical block for a lush landscape effect. Planted beds can serve as rain gardens and low impact development (LID) planters as site conditions and DOEE requirements warrant.

Both maximum options show a typical 2.5’ stone step-off zone and raised planters (at the second row of trees) at seat height to provide informal seating and social gathering spaces and accentuate and enliven entry areas. We recommend standard Washington Globe light fixtures, spaced at 70’ on center, the typical street tree module. Sections and detail plans show the typical condition of each option.
GUIDELINES
FIRST STREET TYPICAL BLOCK

MINIMUM SCENARIO
SOIL VOLUME 10,320 CF
= 10 MEDIUM TREES

MAXIMUM SCENARIO*
SOIL VOLUME 17,127 CF
= 8 LARGE & 13 SMALL TREES

*raised planters should only be raised at the second row of trees
K Street NE is NoMa’s widest street. At 150 linear feet, with a 15’ pedestrian zone, it is wide enough to incorporate the Guidelines to the maximum extent. Thus, it has the potential to become a lush, linear park.

K Street NE is a critical cross street, connecting secondary streets and adjacent neighborhoods to the east and west of NoMa. The only drawback to short-term implementation is that a few block faces have been developed in recent years, in accordance with past design guidelines.

This plan delineates the minimum soil volume acceptable that will allow the establishment of medium sized trees. Planting trees with 35’ spacing will allow acceptable minimum canopy coverage. DDOT exposed aggregate concrete is the primary paving material proposed for a minimum scenario.

The maximum option proposes a double row of street trees, spaced 35’ on center, that will generate a lush, full canopy. This option is only viable with maximum soil volume.

The plan balances paved and planted surfaces. A system incorporating permeable pavings and Silva cells (or other suspended pavement system) enable recommended soil volumes and the benefits of maximum canopy coverage.

The plan shows a typical 2.5’ stone step-off zone. Raised planters (at the second row of trees) at seat height provide informal seating and social gathering spaces to accentuate and enliven entry areas. Standard Washington Globe light fixtures are recommended, spaced at 70’ on center, the typical module.
GUIDELINES
K STREET TYPICAL BLOCK

MINIMUM SCENARIO
SOIL VOLUME 12,897 CF
= 9 LARGE TREES

SOIL VOLUME 28,839 CF
= 15 LARGE & 15 MEDIUM TREES

MAXIMUM SCENARIO

FOOD TRUCKS
VENDING

CANOPY & LIGHTING GRID
SOIL VOLUME
MATERIALITY
GAPS IN PLANTING
ACCENTS

SOIL VOLUME
MATERIALITY
**GUIDELINES**

**L, M & N STREETS TYPICAL BLOCK**

**NoMa’s Mixed Use Streets**

L, M, and N Streets NE are secondary collector streets within NoMa. Ideally, these streets would extend the lush, inviting linear park-like character established on First and K Streets NE into the rest of the neighborhood. The minimum DDOT pedestrian zone width recommended for this street is 10’.

**Minimum Plan**

This plan delineates the minimum soil volume that will allow the establishment of medium sized trees. In order to obtain acceptable minimal canopy coverage, at least seven trees will need to be planted within a typical block face. Standard DDOT exposed aggregate concrete is the primary paving material proposed for a block meeting the minimum plan.

**Maximum Plan**

In both options, soil volumes are proposed that will allow the establishment of seven to eight mature canopy trees as well as understory trees within full beds of lush plantings. The plan includes establishment of a single row of large street trees spaced 35’ on center, accented with understory plantings.

**Max Scenario 1**

This option favors paved surface area for pedestrian movement and gathering over planting area, while preserving a continuous canopy and large trees. In order to accomplish this, we recommend the use of permeable pavers suspended on Silva cells (or other suspended pavement system). This system has shown to provide growing conditions that promote larger and healthier trees. Pairing Silva cells (or other suspended pavement system) with maximum soils will also serve to fulfill DOEE SWM requirements, resulting in a win-win combination.

**Max Scenario 2**

Scenario 2 maximizes the planting area within a typical block for a lush landscape effect. Beds can serve as rain gardens and low impact development (LID) planters as site conditions and DOEE requirements warrant.

Both maximum options include a typical 2.5’ stone step-off zone and raised planters at seat height to provide informal seating and social gathering spaces and accentuate and enliven entry areas. We recommend standard Washington Globe light fixtures, spaced at 70’ on center, the typical street tree module. Sections and plans show the typical condition of each option.
2ND STREET is the narrowest street within NoMa and serves primarily as the link for the eastern portion of NoMa along the rail yard. As such, it is the most challenging of the streets to implement the goals of the Guidelines. The minimum DDOT pedestrian zone width recommended for this street is 6'.

This plan delineates the minimum soil volume that will allow the establishment of medium sized trees. Due to the narrow street width, only three to four medium sized trees may be established along a typical block face without providing additional soil volumes.

In both maximum plan options, the soil volumes proposed will allow the establishment of either nine to ten medium trees or six large mature canopy trees, were conditions permit. Only minimal ground plane plantings are possible in this scenario.

This may be accomplished through the use of permeable pavers placed on Silva cells (or other suspended pavement system) to provide growing conditions that promote larger and healthier trees.

This system has shown to provide growing conditions that promote larger and healthier trees. Pairing Silva cells (or other suspended pavement system) with maximum soils will also serve to fulfill DOEE SWM requirements, resulting in a win-win combination.

Standard Washington Globe light fixtures should be spaced with the typical street tree module in mind, so that the tree canopy will not interfere with light disbursement.
GUIDELINES
2ND STREET, DELAWARE AVENUE, AND PATTERSON STREET
TYPICAL BLOCK

MINIMUM SCENARIO
SOIL VOLUME 2,988 CF
≈ 3-4 MEDIUM TREES

MAXIMUM SCENARIO
SOIL VOLUME 10,080 CF
≈ 11 MEDIUM TREES

MAXIMIZE PERMEABLE PAVERS

MATERIALITY

SOIL VOLUME

CANOPY & LIGHTING GRID

2ND STREET SECTION - TYPICAL CONDITION

2ND STREET DETAIL PLAN

MINIMUM

MAXIMUM
GUIDELINES

MINIMUM SCENARIO: RENDERING TYPICAL BLOCK
GUIDELINES

MAXIMUM SCENARIO: RENDERING TYPICAL BLOCK
GUIDELINES

MAXIMUM SCENARIO: RENDERING TYPICAL BLOCK (ANNOTATED)

- MAXIMIZE PERMEABLE PAVERS & SILVA CELL
- MAXIMIZE SOILS/STORMWATER
- MAXIMIZE SOILS/TREE CANOPY GROWTH
- BURNHAM WALL
- SOCIAL SPACES
- 10FT MIN. SIDEWALK/EXPOSED AGGREGATE

10FT MIN. SIDEWALK/EXPOSED AGGREGATE