



Review of Codes/Ordinances for Distributed Green Infrastructure

Plan Commission Workshop

City of Madison, Wisconsin

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With project support from

Applied Ecological Services & Tetra Tech, Inc.

September 30, 2021

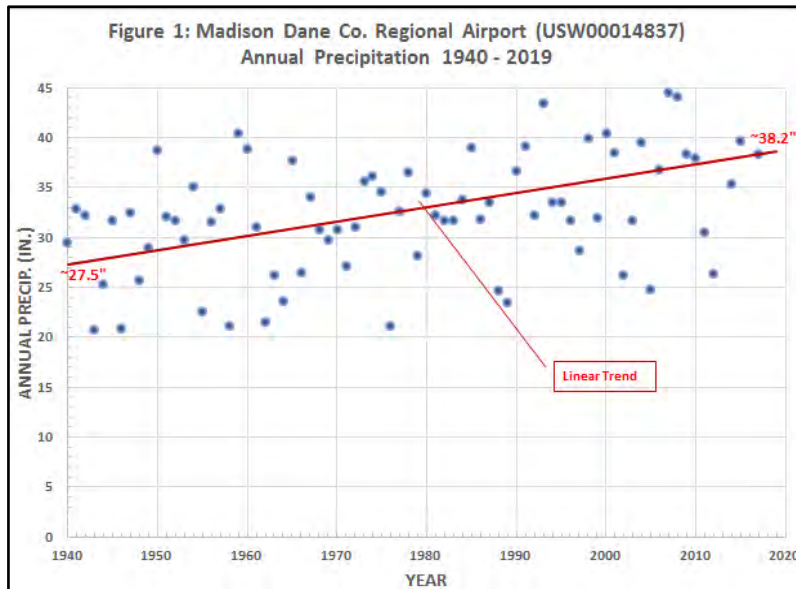
Distributed Green Infrastructure (DGI) Codes & Ordinances Review Project: Plan Commission Supporting Materials

On Thursday, September 30th, our team looks forward to joining the Plan Commission for a workshop on key components of the DGI Codes & Ordinances Review Project, which was initiated by the City of Madison’s Engineering Division. We will cover five key areas from the review and seek your questions, input, and ‘takeaways’ from these discussions. Supporting materials for specific topics are included on the pages that follow. These are provided both as references for your use during our discussion, and as “food for thought” on the possible range of options that we, along with City staff, will present next Thursday.

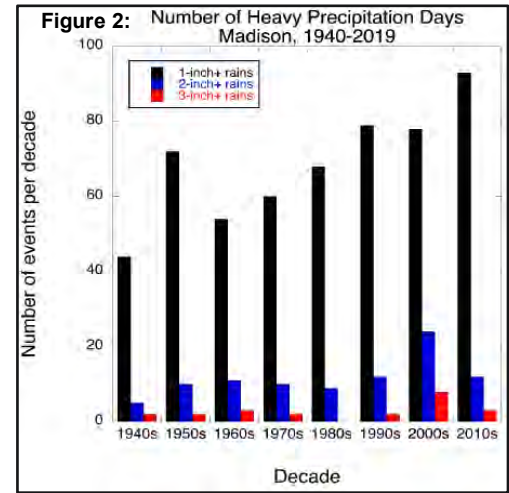
1. Project Introduction & Key Findings
2. Rainwater Harvesting & Wisconsin’s State Plumbing Code
(Principal reference is SPS 382.60, Page 82, Table 382.70-1: Plumbing Treatment Standards)
https://docs.legis.wisconsin.gov/code/admin_code/sps/safety_and_buildings_and_environment/380_387/382.pdf#page=63
3. Definitions of “Lot Coverage,” Green Roofs, and Pervious Paving Systems
 - Side-by-Side of MGO Ch. 28.211, Definitions of “Pervious Paving” and “Lot Coverage” with MGO Ch. 37.04, “Green roof,” “Impervious Area,” “Impervious Surface,” and “Pervious/Permeable Pavement”
 - CODE EXAMPLE: Allowing increase in lot coverage for use of defined DGI practices
 - **Links to Code:**
MGO 28.211: https://library.municode.com/wi/madison/codes/code_of_ordinances?nodeId=COORMAWIVOIICH20-31_CH28ZOC00R_SUBCHAPTER_28ORDERUCO_28.211DE
MGO 37.04: https://library.municode.com/wi/madison/codes/code_of_ordinances?nodeId=COORMAWIVOIVCH32-45_CH37THPUSTSYINERCO_37.04DE
4. Tree Species Selection & Soil Volumes for Private Property Landscaping
 - Soil Volume Calculator
 - City of Madison DRAFT Recommended Tree Species by Size
5. Landscaping Standards for Private Property Landscaping
 - SITE PLAN EXAMPLE: Municipal Library
 - CODE EXAMPLE: Madison’s Plant Points & a modified “Plant Points” standard to substitute green infrastructure plantings for shrubs
 - **Links to Madison Code Section:**
MGO 28.142: https://library.municode.com/wi/madison/codes/code_of_ordinances?nodeId=COORMAWIVOIICH20-31_CH28ZOC00R_SUBCHAPTER_28IGERE_28.142LASCRE
6. Verification of As-Built Conditions
 - CODE EXAMPLE: Wauwatosa, WI (link: https://library.municode.com/wi/wauwatosa/codes/code_of_ordinances?nodeId=TIT24ZO_CH24.12LASC)
 - SELF-CERTIFICATION FORM EXAMPLE: Lane County, Oregon (link: https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_3585797/File/Government/County%20Departments/Public%20Works/Land%20Management%20Division/Building%20Safety/Frequently%20Used%20Forms/AsBuiltCertificate.pdf)

Changing Precipitation Patterns in Madison, 1940-2020

Precipitation patterns in Madison, and indeed in most of the Great Lakes, are changing. Larger and more intense storms, along with an increase in total rainfall, are affecting the City's stormwater systems and ecology. Increasing the use of Distributed Green Infrastructure (DGI) and other water-absorbing sites throughout the City is one strategy to improve water quality and capture more storm runoff.



Source: J. Bachhuber analysis (2020)



Source: Wisconsin's Changing Climate: Impacts and Adaptation (2011)



Terrace rain gardens will continue to be an important part of the City's DGI strategy, especially when roads are reconstructed. Siting trees within terrace rain gardens must be done with care since many rain garden plants require full sun.



**MGO Ch. 28 and Ch. 37 Definitions:
“Impervious Area,” “Green Roof,” “Pervious Pavement”**

MGO 28.211 - ZONING	MGO 37.04 – STORMWATER
<p><u>Lot Coverage</u>. The total area of all buildings, measured at grade, all accessory structures including pools, patios, etc., and all paved areas as a percentage of the total area of the lot, <i>with the following exceptions: sidewalks or paved paths no wider than five (5) feet, pervious pavement, green roofs and decks.</i></p>	<p><u>Impervious Surface</u> means an area that releases as run-off all or a large portion of the precipitation that falls on it, except for frozen soil. Rooftops, sidewalks, driveways, parking lots, gravel storage areas, underground structures with less than two (2.0) feet of pervious material installed above the outside top of the concrete structure and streets are examples of surfaces that typically are impervious. Pervious/permeable pavement constructed in accord with WDNR Technical Standard # 1008 to meet the requirements of an Ordinance stormwater management requirement shall not be considered pervious for the purposes of Stormwater Utility Charges nor for calculation of composite curve numbers as part of stormwater management requirements. <i>However if constructed meeting SOC #1008 this type of pavement may meet Zoning code requirements for greenspace.</i></p>
	<p><u>Impervious Area</u> means any land surface that has been compacted or covered with a layer of material so that it is highly resistant to infiltration by rain or melting snow. The term includes without limitation due to enumeration, all areas covered by structures, roofs (including overhangs), roads, sidewalks, patios, porches, driveways, parking lots, loading docks, and semi-impervious surfaces such as compacted clay and gravel, all as measured on a horizontal plane. It is noted here that due to the myriad of different styles and configurations of solar panel installations, these will be reviewed by the administrative authority on an individual basis for impervious coverage purposes.</p>

MGO 28.211 - ZONING	MGO 37.04 – STORMWATER
<p>Green Roof: Not defined</p>	<p><u>Green Roof</u> means a roofing system with a layer of vegetation planted over a waterproofing system that is installed on top of a flat or slightly sloped roof. They fall into two main categories—extensive and intensive.</p> <p>An extensive green roof has a shallow growing medium—usually less than six (6) inches thick—with a modest roof load, limited plant diversity, and minimal watering requirements.</p> <p>An intensive green roof has a minimum twelve (12) inch thick growing medium, though it may range upwards to several feet. This depth of growing medium can support a more diverse plant selection, including small trees.</p>
<p>Pervious Pavement. Pavement that is designed and maintained to allow precipitation to infiltrate into the ground, in order to reduce the volume and velocity of stormwater runoff. Pervious pavement materials include pervious interlocking concrete paving blocks, concrete grid pavers, perforated brick [sic]</p>	<p>Pervious/Permeable Pavement shall be pavement that is constructed in accord with WDNR Technical Standard # 1008 to meet this Ordinance's stormwater management requirements. If constructed to meet a requirement of this Ordinance, it shall not be considered pervious for the purposes of Stormwater Utility Charges nor for calculation of composite curve numbers as part of stormwater management requirements. However, if constructed meeting Technical Standard #1008 this type of pavement may be considered to meet lot coverage standards under Chapter 28.</p>

Code Example: Allowing Increased Lot Coverage for Use of DGI

A. Lot Coverage Calculations and Stormwater Management Measures

Maximum lot coverage by all buildings and impervious surfaces shall be as set forth in the individual district regulations in Sections 335-17 through 335-26, as modified in a Planned Development Overlay approval under Section 335-30.

However, in conjunction with an approved Stormwater Management Plan, the maximum lot coverage may be increased by up to *[ten percent of the maximum for the underlying district or five thousand SF, whichever is less]* through the use of the stormwater treatment practices listed in Table 335-12-1 below, with no more than five percent of such increase attributable to the use of permeable surfacing.

The area of the stormwater control measure shall be determined using the outside perimeter of the area wholly occupied by the stormwater control measure or permeable surfacing.

Table 325-X Calculation of Impervious Cover Substitution for Stormwater Control Measures

	Percent of area of the stormwater control measure that may be counted as permeable
Amended Soil Areas with Native Plantings	10% of the area of the amended soil area
Bioretention	25% of the area of the bioretention area or rain garden
Cistern/Rainwater Harvesting	25% of the roof or impervious area draining to the cistern
Green roof	50% of the area of the green roof
Permeable surfacing meeting WI DNR TPS 1008	25% of the area of permeable surfacing <i>(limited to 5% increase in maximum lot coverage)</i>
Stormwater tree/Planter Box System	25% of the impervious area draining to the stormwater tree
Vegetated swale	10% of the area of the vegetated swale

Recommended Tree Species for Landscaped Areas on Private Property

On the following two pages are the recommended tree species for landscaped areas on private property, along with supporting information about their suitability in different sun and soil conditions. This was developed with the City Forester using information and reference material from Wisconsin sources, including the City of Milwaukee's recently updated urban tree and landscaping standards.

Minimum Planting Area Sizes with Recommended Minimum Soil Volumes per Tree

The City Forester, Engineering Division, and consultant team have reviewed options for a minimum soil volume requirement that could be included or advised through the zoning code. This would translate to a requirement for a certain minimum surface area and soil volume per planting island or area where trees are installed. The chart below shows how much surface area and soil volume would be required for small, medium, and large trees from the recommended tree species list. Cost implications of requiring quality planting soil also are estimated in the columns at right.

Example Soil Volumes and Hole Sizes Using Proposed Guidance (for planting soil, not structural)									
Tree Size Goal	Expected Tree Height (ft.)	Soil Volume Required (cu. ft.) (cu. yd)		Hole Size Dimension @ 3 ft depth (ft.)				Cost vs. fill soil	
								Fill Soil Cost/ CY	Planting Soil Cost/CY
								\$12	\$38
Small	< 25	400	14.8	3.0	11.5	11.5	133	\$178	\$563
Medium	25 - 40	800	29.6	3.0	16.3	16.3	267	\$356	\$1,126
Large	40 - 100	1,200	44.4	3.0	20.0	20.0	400	\$533	\$1,689
*Uses 3' as maximum depth									
For comparison: Parking space = 9' x 18' = 162 SF									

One resource on ratio of tree size to soil volume is Deeproot.com, a firm that works with University of Minnesota researchers on urban tree health. A useful reference is: <https://www.deeproot.com/blog/blog-entries/our-recommended-soil-volume-for-urban-trees-2/>

CITY OF MADISON
RECOMMENDED TREE SPECIES FOR LANDSCAPED AREAS ON PRIVATE PROPERTY

LARGE CANOPY TREES (40-100 FEET TALL)										
SPECIES					LIGHT REQUIREMENTS			MOISTURE		
Botanical Name	Common Name	Mature Size	Mature Canopy Spread	Description	Full Sun	Part Shade	Shade	Wet	Mesic	Dry-Mesic
Acer x freemanii spp.	Freeman maple	40'-60'	15'-40'		☀️			💧💧💧		
Acer x freemanii 'Armstrong'	Armstrong Freeman maple	70'	15'		☀️	⚙️			💧💧💧	
Acer x freemanii 'Autumn Blaze'	Autumn Blaze® Freeman maple	50'	40'		☀️	⚙️		💧💧💧	💧💧💧	
Acer miyabei 'Morton'	Miyabe maple	50'	35'		☀️	⚙️			💧💧💧	
Betula nigra	River birch	40'-70'	30-40'		☀️			💧💧💧		
Catalpa speciosa	Catalpa	40'-60'	30-45'		☀️	⚙️		💧💧💧	💧💧💧	
Celtis occidentalis	Hackberry	40'-60'	40-60'		☀️	⚙️		💧💧💧	💧💧💧	
Celtis occidentalis 'Prairie Sentinel'	Prairie Sentinel hackberry	45'	12'		☀️	⚙️		💧💧💧	💧💧💧	
Cercidiphyllum japonicum	Katsura Tree	40'-60'	25'-60'		☀️	⚙️			💧💧💧	
Ginkgo biloba (male only)	Ginkgo	40-50'	15-40'		☀️			💧💧💧	💧💧💧	
Gleditsia triacanthos	Honey locust	40-60'	30-50'		☀️				💧💧💧	
Gleditsia triacanthos 'Draves' PPAF	Street Keeper® Honey locust	45'	20'		☀️				💧💧💧	
Gymnocladus dioica	Kentucky coffeetree	50-60'	35-40'		☀️				💧💧💧	
Liriodendron tulipifera	Tulip tree (Yellow poplar)	60'-90'	15-45'		☀️				💧💧💧	
Phellodendron amurense	Amur Corktree (male cultivars only)	45'	50'		☀️				💧💧💧	
Platanus x acerifolia	London planetree	50-60'	30-45'		☀️			💧💧💧	💧💧💧	
Quercus bicolor	Swamp white oak	50'-60'	50'-60'		☀️			💧💧💧	💧💧💧	
Quercus robur 'Crimschmidt'	Crimson Spire™ hybrid oak	45'	15'		☀️	⚙️		💧💧💧	💧💧💧	🌱
Quercus robur x bicolor 'Long'	Regal prince oak	45'	18'		☀️			💧💧💧	💧💧💧	
Taxodium distichum	Bald cypress	50-55'	20'-30'		☀️			💧💧💧	💧💧💧	
Tilia americana	American basswood	40-60'	25-30'		☀️	⚙️			💧💧💧	🌱
Tilia cordata	Little-leaf linden	50'-70'	30-35'		☀️	⚙️			💧💧💧	
Tilia tomentosa	Silver linden	40-50'	20-30'		☀️	⚙️			💧💧💧	
Ulmus minor 'Homestead'	Homestead elm	55'	35'		☀️				💧💧💧	🌱
Ulmus minor 'Pioneer'	Pioneer elm	50'	50'		☀️	⚙️			💧💧💧	🌱
Ulmus minor 'Regal'	Regal elm	50'	35-45'		☀️	⚙️			💧💧💧	🌱
Ulmus minor 'Danada Charm'	Danada charm elm	60'-70'	50'-60'		☀️	⚙️			💧💧💧	🌱
Ulmus parvifolia 'Frontier'	Frontier elm	40-50'	25-35'		☀️				💧💧💧	🌱
Ulmus wilsoniana 'Prospector'	Prospector elm	35'-40'	20'-30'		☀️				💧💧💧	🌱
Ulmus x spp.	Hybrid Elm	40-60'	20-45'		☀️					🌱

CITY OF MADISON
RECOMMENDED TREE SPECIES FOR LANDSCAPED AREAS ON PRIVATE PROPERTY

MEDIUM SUBCANOPY TREES (25-40 FEET TALL)										
SPECIES					LIGHT REQUIREMENTS			MOISTURE		
Botanical Name	Common Name	Mature Size	Mature Canopy Spread	Description	Full Sun	Part Shade	Shade	Wet	Mesic	Dry-Mesic
Acer truncatum x A. plantanoides	Purpleblow (shantung) maple	30-35	25		☀️	⚙️			💧💧💧	
Amelanchier arborea	Downy serviceberry	15'-25'	15'-25'		☀️	⚙️			💧💧💧	
Alemanchier laevis	Allegheny serviceberry	15'-25'	15'-25'		☀️	⚙️	⚙️		💧💧💧	
Alemanchier x grandiflora	Apple serviceberry	20'-25'	20'-25'		☀️	⚙️			💧💧💧	
Carpinus betulus	European hornbeam	35-40	15-40		☀️	⚙️			💧💧💧	
Carpinus caroliniana	American hornbeam	15-30	10 to 30		☀️	⚙️			💧💧💧	
Cercis canadensis (northern grown)	Eastern redbud	20'-30'	25'-35'		☀️	⚙️			💧💧💧	
Crataegus spp.	English hawthorn	20-30	20-35		☀️				💧💧💧	
Crataegus crusgalli var. inermis	Thornless cockspur hawthorn	20'-30'	25-35		☀️				💧💧💧	
Maackia amurensis	Amur maackia (white)	20'-30'	20'-35'		☀️				💧💧💧	
Prunus maackii	Amur chokecherry (white)	20'-30'	18'-25'		☀️	⚙️			💧💧💧	
Prunus sargentii	Sargent's cherry (pink)	25'-40'	40'-50'		☀️	⚙️			💧💧💧	
Pyrus calleryana spp.	Callery pear (white)	25-35	20-30		☀️				💧💧💧	
SMALL CANOPY TREES/SHRUBS (LESS THAN 25 FEET TALL)										
SPECIES					LIGHT REQUIREMENTS			MOISTURE		
Botanical Name	Common Name	Mature Size	Mature Canopy Spread	Description	Full Sun	Part Shade	Shade	Wet	Mesic	Dry-Mesic
Magnolia loebneri	Loebner's magnolia	15-30	20-30		☀️	⚙️			💧💧💧	
Malus spp.	Crabapple	10'-25'	10'-25'		☀️				💧💧💧	
Syringa reticulata	Japanese tree lilac	20'-30'	15'-20'		☀️				💧💧💧	

Landscaping “Points”

MGO 28.142(4)(c): The City’s current “points” for different landscape materials are in this table. Bioretention, deep-rooted landscaping in amended soils, and other green infrastructure landscape features do not “count” as points, unless determined by staff.

Plant type	Points	Minimum Size at Installation
Overstory deciduous tree	35	2½ inch caliper measured diameter at breast height (dbh) Minimum 12'-14' Hgt.
Tall Evergreen Tree (i.e. pine, spruce)	35	5-6 feet tall
Ornamental tree	15	1½ inch caliper
Upright Evergreen shrub (i.e. arborvitae)	10	3-4 feet tall
Shrub, deciduous	3	#3 gallon container size Min. 12"-24"
Shrub, evergreen	4	#3 gallon container size Min. 12"-24"
Ornamental grasses/perennials	2	#1 gallon container size Min. 8"-18"
Ornamental/decorative fencing or wall	4 per 10 ln. ft.	n/a
Existing significant specimen tree	14 per caliper inch dbh	Minimum size: 2 ½ inch caliper dbh Maximum points per tree: 200 *Trees must be within developed area and cannot comprise more than 40% (30%) of total required points
Landscape furniture for public seating and/or transit connections	5 points per "seat"	*Furniture be within developed area, publically [<i>sic</i>] accessible, and cannot comprise more than 5% of total required points

Example: Revised Plant Points Table with Bioretention Included

For purposes of this Section, bioretention plantings shall be equivalent to small flowering shrubs or native grasses/forbs at a rate of 9 SF of plantings per large deciduous shrub, small flowering shrub, or native grass/forb.

Table 15-5.0302 Standard Plant Units

Planting Type	Planting Size		Land Use Type		
	Minimum Diameter/ Size	Minimum Height	Multi-Family	Commercial, Industrial, Office & Similar	Manufacturing/ Industrial
Canopy/ Shade Tree	3" diameter @ 6" above root flare		1.5/ dwelling unit	1/ 5 parking spaces	1/10 parking spaces
Evergreen Tree OR Ornamental Tree	3" diameter @ 6" above root flare	6'	1/ dwelling unit	1/ 5 parking spaces	1/10 parking spaces
Evergreen Shrub OR Large Deciduous Shrub	18" wide	3'	1/ dwelling unit	1/ 5 parking spaces	1/10 parking spaces
Small Flowering Shrubs OR Native Grasses/ Forbs OR		18"	3/ dwelling unit	1/ 5 parking spaces	1/10 parking spaces
Bioretention Plantings	3" - 4" pot (or as specified by Landscape Architect)		Per storm water mgmt. plan; Max. Spacing 18" on center; 9 SF = one 18" small flowering shrub or 1 gallon pot of native grasses/forbs		

Site Plan: Bioretention substituted for evergreen and flowering shrubs/ornamental grasses

In the landscape plan on the following page, all required shrubs have been replaced with bioretention, using the table on the previous page, and the bioretention areas are sized to treat all of the site's runoff. The site ends up being "over-planted," with more landscape materials installed than are required by code, but fewer shrubs. The enlarged Planting Schedule below shows the calculations.

<u>LANDSCAPE CALCULATIONS</u>	
<u>REQUIRED CANOPY / SHADE TREES</u>	
1 Tree / 5 Parking Spaces (137/5) = 27.4 Trees	
Required: 28 Trees	
Provided: 28 Trees	
<u>REQUIRED EVERGREEN TREES or ORNAMENTAL TREES</u>	
1 Tree / 5 Parking Spaces (137/5) = 27.4 Trees	
Required: 28 Trees	
Provided: 28 Trees	
<u>REQUIRED EVERGREEN SHRUBS or LARGE DECIDUOUS SHRUBS</u>	
1 Large Shrub / 5 Parking Spaces (137/5) = 27.4 Shrubs	
Required: 28 Large Shrubs	
Provided: 0, see bioretention plantings	
<u>REQUIRED SMALL FLOWERING SHRUBS or ORNAMENTAL GRASSES</u>	
1 Small Shrub / 5 Parking Spaces (137/5) = 27.4 Shrubs or Grasses	
Required: 28 Small Shrubs	
Provided: 0, see bioretention plantings	
<u>BIORETENTION PLANTINGS</u>	
1 Large Deciduous Shrub = 16 SF of Bioretention Plantings	
28 Large Deciduous Shrubs x 16 SF = 448 SF	
1 Small Flowering Shrub = 9 SF of Bioretention Plantings	
28 Small Flowering Shrubs x 9 SF = 252 SF	
448 SF + 252 SF = 700 SF	
700 SF x .44 (18" spacing) = 308 plantings	
Required: 308	
Provided: 1,540	

LANDSCAPE CALCULATIONS

REQUIRED CANOPY / SHADE TREES

1 Tree / 5 Parking Spaces (137/5) = 27.4 Trees
Required: 28 Trees
Provided: 28 Trees

REQUIRED EVERGREEN TREES or ORNAMENTAL TREES

1 Tree / 5 Parking Spaces (137/5) = 27.4 Trees
Required: 28 Trees
Provided: 28 Trees

REQUIRED EVERGREEN SHRUBS or LARGE DECIDUOUS SHRUBS

1 Large Shrub / 5 Parking Spaces (137/5) = 27.4 Shrubs
Required: 28 Large Shrubs
Provided: 0, see bioretention plantings

REQUIRED SMALL FLOWERING SHRUBS or ORNAMENTAL GRASSES

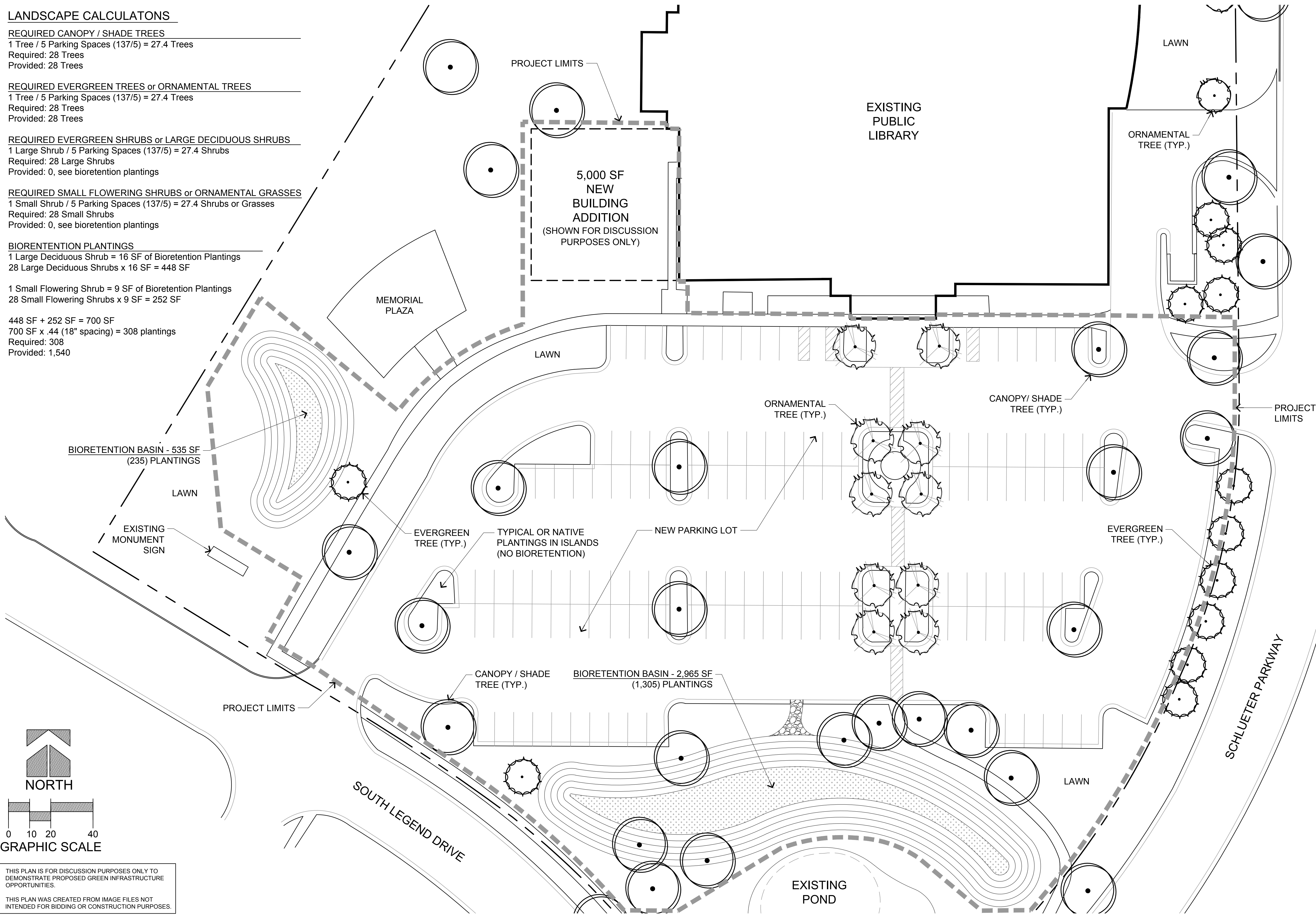
1 Small Shrub / 5 Parking Spaces (137/5) = 27.4 Shrubs or Grasses
Required: 28 Small Shrubs
Provided: 0, see bioretention plantings

BIORETENTION PLANTINGS

1 Large Deciduous Shrub = 16 SF of Bioretention Plantings
28 Large Deciduous Shrubs x 16 SF = 448 SF

1 Small Flowering Shrub = 9 SF of Bioretention Plantings
28 Small Flowering Shrubs x 9 SF = 252 SF

448 SF + 252 SF = 700 SF
700 SF x .44 (18" spacing) = 308 plantings
Required: 308
Provided: 1,540



DESCRIPTION

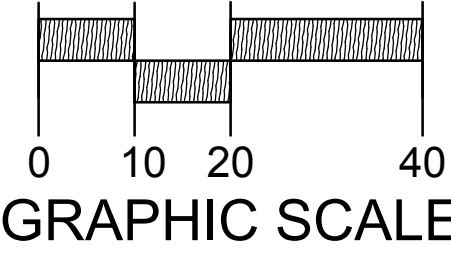
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CREATIVITY BEYOND ENGINEERING

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Naperville, IL | Pittsburgh, PA | Irvine, CA

**FRANKLIN PUBLIC LIBRARY
BUILDING ADDITION
PRELIMINARY GREEN INFRASTRUCTURE
LANDSCAPE EXHIBIT**

© COPYRIGHT 2018 R.A. Smith, Inc.
DATE: 10/30/2018
SCALE: 1" = 20'
JOB NO. 3180111
PROJECT MANAGER: TOM MORTENSEN PLA, ASLA
DESIGNED BY: LJH
CHECKED BY: TJM
SHEET NUMBER
L100



THIS PLAN IS FOR DISCUSSION PURPOSES ONLY TO DEMONSTRATE PROPOSED GREEN INFRASTRUCTURE OPPORTUNITIES.
THIS PLAN WAS CREATED FROM IMAGE FILES NOT INTENDED FOR BIDDING OR CONSTRUCTION PURPOSES.

As-Built Verifications: City of Wauwatosa, WI

The text below is part of the current zoning code for the City of Wauwatosa. This code section is provided as an example of a very stringent procedure that one Wisconsin city has adopted for verification of landscape installation and survival through an initial period.

24.12.070 Performance Guarantee.

- A. At the time of final execution of a certified survey map, subdivision plat or site plan approval with the City, or at the time of execution of an approved zoning permit, development agreement or any permit requiring a landscape plan, the owner is required to make a fiscal arrangement, either by bond, escrowed funds, certificate of deposit or letter of credit, with the City to ensure that the owner will be in full compliance with landscape installation and maintenance requirements.
- B. The developer shall submit a cost estimate for the landscaping based on actual bids or qualified or licensed landscape architect, forester, master gardener and/or landscape professional estimate. The cost estimate must include plant material and cost of installation.
- C. Additionally, a maintenance portion of the surety is required to ensure that the landscape installation is maintained during its critical establishment (one-year) period following installation. The amount of the surety shall include 100% of the cost estimate for such maintenance. The establishment period is one year for trees, shrubs and perennials that are larger than one quart. The establishment period is three years for landscapes grown from seed, including prairie, wildflower and no mow turf mixes.
- D. After the critical one-year establishment period following initial installation, the property owner shall be responsible for the perpetual care and maintenance of the required landscape area.
- E. Any owner required to file such surety shall grant a temporary access easement and license to the City or its agent to enter upon the land for the purposes of installing or maintaining the required landscaping for the length specified for maintenance compliance, in the event that such landscaping is not in place by the date specified in the agreement.
- F. Should the City be required to provide for full compliance, the applicant shall forfeit that portion of the surety required to reimburse it for the cost of bring the property into compliance. The balance of such surety shall be released when landscape improvement verification and compliance is received.
- G. A qualified or licensed landscape architect and/or landscape professional shall perform the final inspection of the site to ensure adherence to the landscape plan and required installation techniques per this chapter. The qualified or licensed landscape architect and/or landscape professional will be required to sign a letter of compliance before the fiscal security will be released. The City of Wauwatosa must also concur with the letter of compliance before the fiscal security will be released.
- H. Return of fiscal security. When it is determined that the landscaping has been installed and maintained for one year in accordance with an approved landscape plan, the City of Wauwatosa shall return the surety to the applicant. The Development Department shall authorize the refunding of the deposits.

(Ord. No. O-19-31 , pt. IX, 12-3-19; Ord. No. O-21-17 , pt. XII, 8-3-2021)

Editor's note(s)—Ord. No. O-19-31 , pt. VIII, adopted December 3, 2019, repealed § 24.12.070 and enacted a new § 24.12.070. Former § 24.12.070 pertained to alternative compliance.

As-Built Verifications: Lane County, Oregon's verification form

The form below, from Lane County, Oregon, is an example of a simple self-certification by the owner of a property and an appropriate professional to verify that a property is compliant with applicable codes. A form of this type could be developed for Madison to enable simple self-certification for as-built conditions, including stormwater BMPs or landscape plans. The form is linked at:

https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_3585797/File/Government/County%20Departments/Public%20Works/Land%20Management%20Division/Building%20Safety/Frequently%20Used%20Forms/AsBuiltCertificate.pdf,

LANE COUNTY PUBLIC WORKS	
Certification of Compliance for As Builts	
<small>LAND MANAGEMENT DIVISION 3050 North Delta Highway, Eugene OR 97408</small>	
BP/EL# _____	Place Professional Stamp/Seal Here:
I, _____	
am duly registered/licensed in the State of Oregon as a	
<input type="checkbox"/> Registered Professional Engineer <input type="checkbox"/> Architect <input type="checkbox"/> Supervising Electrician <input type="checkbox"/> Journeyman Plumber <input type="checkbox"/> Mechanical Contractor	
License/Registration number _____	
I certify that the <input type="checkbox"/> Building Structure <input type="checkbox"/> Electrical System <input type="checkbox"/> Plumbing <input type="checkbox"/> Mechanical System	
of the property located at (address) _____	
is fully compliant with all applicable statutes and current codes _____	
I agree to indemnify, defend, and hold harmless Lane County, its Board of Commissioners, Officers, Agents and employees for any and all damages, claims, losses, and expenses arising out of or resulting from the acceptance of this certification in lieu of Lane County performing the inspection of the item/s certified herein.	
Signature _____	Date _____
* PLEASE ATTACH NARRATIVE AND OTHER SUPPORTING DOCUMENTATION TO THIS SHEET *	
Owner's Request For Acceptance	
I, _____ am the <input type="checkbox"/> owner <input type="checkbox"/> agent	
of the property located at (address) _____	
I hereby request that Lane County accept the above certification of (name) _____	
dated _____, as to the <input type="checkbox"/> Building Structure <input type="checkbox"/> Electrical System <input type="checkbox"/> Plumbing <input type="checkbox"/> Mechanical System	
I agree to indemnify, defend, and hold harmless Lane County, its Board of Commissioners, Officers, Agents and employees for any and all damages, claims, losses, and expenses arising out of or resulting from the acceptance of this certification in lieu of Lane County performing the inspection of the item/s certified herein.	
This agreement is made with the knowledge and consent of any co-owner existing at the time of execution of this agreement, and is binding on the co-owner, my personal representative, the personal representative of any co-owner, and any other person claiming ownership of the property through me.	
Signature _____	Date _____
<small>LANE CO. 11-27-2017 SWM</small>	
<small>LAND MANAGEMENT DIVISION / PUBLIC WORKS DEPARTMENT / 3050 North Delta Highway, Eugene OR 97401, OR 97408 / FAX 541/582-3947 BUILDING (541) 682-4651 / PLANNING (541) 682-3577 / SURVEYORS (541) 682-3105 / COMPLIANCE (541) 682-3724 / ON-SITE SEWAGE (541) 682-3754</small>	

Your Fearless Presenters

Juli Beth (JB) Hinds, AICP. JB is the founder and principal of Birchline Planning LLC, based in Waterbury, Vermont and providing services throughout the Great Lakes, New England, California and Pacific. An experienced community development and stormwater utility director with skills in



land use, zoning and stormwater management, she supports communities and organizations throughout Wisconsin and throughout the US facing challenges with zoning, land use, infrastructure finance (including stormwater utility development and credit policies), and public communications. Developing strategic plans for improving coordination among and between municipal departments and applicants has been a core element of her 25+ years of professional practice, experience, and academic work. She is an Instructor and Staff Research Associate in the Department of Urban Studies & Planning at the University of California San Diego where she teaches

land use planning and sustainability courses. Enthusiastic members of Badger Nation, she and her husband Nick recently celebrated graduation of their daughter Dr. Abbey K. Hinds, from UW-Madison's School of Veterinary Medicine.



James A. Bachhuber, PH. Jim has devoted his 40+ year professional career to serving the water resource and stormwater needs in Wisconsin and nationally. His early work at the Wisconsin DNR during the formative years of nonpoint source pollution and stormwater management program development provides a unique understanding of the state policies impacting many aspects of municipal government. He serves on numerous statewide technical and policy advisory committees. As a private consultant for 21 years, Jim has worked with multiple municipalities in Wisconsin on all aspects of their stormwater management programs including MS4 permit compliance, city-wide planning, TMDL

evaluation, stormwater utility development, ordinance review, and management practice design. Mr. Bachhuber is now an independent consultant. He and JB worked together on WEF's *User Fee Funded Stormwater Programs* guide in 2011-2012.

