



A Report Evaluating The Suitability Of Detroit's City Code To Require Vegetative Buffers And Increased Tree Canopy

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1. Introduction

This report evaluates to what degree the current version of the Detroit city code hinders or facilitates the requirement of vegetative buffers and tree canopy.

1.1 Scope

The report assumes that such landscaping features are desirable, and so does not invest time in policy justification. There are important technical considerations such as where to place trees, how many and which kinds to plant, etc. However, this report only evaluates whether, legally speaking, Detroit's code poses obstacles to or facilitates canopy and buffers.

Mostly, this report concerns itself with increasing tree canopy in areas where people are outdoors and significantly exposed to air pollution, as opposed to areas of intended recreation such as parks. Where it addresses buffers, unless otherwise stated, it addresses buffers on private property.

1.2 Summary

Generally, Detroit's code does not contain many barriers to the requirement of vegetative buffers and increased tree canopy. At the same time, it does only the minimum to encourage and facilitate them. Serious consideration should be paid to:

- Enacting ordinances that require buffers and canopy on private land
- Enacting ordinances that preserve trees on private land, and updating the tree preservation ordinances that apply to public land
- Better utilizing preexisting institutions, and creating new ones, that can implement a comprehensive urban forest policy concerned mainly with private land

2. The structure of Detroit's city code

There is nothing unique about the structure of Detroit's city code. The zoning chapter of the code is Chapter 61. Relevant to this report, the chapter consists of the following:

- Article II, which describes the institutional makeup of city government and includes information on city council as a legislative body, various executive departments, and also advisory committees.
- Articles III & IV, which describe the review and approval procedures.
- Article VII, which delineates the various zoning districts.
- Articles VIII to XI, which describe in more detail the zoning districts.
- Article XII to XIV, which describe the regulations that apply to certain uses depending on the use and the zoning district in which it is located.
- Article XVII, which contains the zoning maps.

There are five kinds of zoning districts: residential, business, industrial, special (such as casinos and parks), and historic. There are several categories of land uses, but only two principal ones. By-right uses are, as the name suggests, authorized by right and require little in the way of process for approval. Conditional uses require far more process for approval, and additional standards apply to them. Articles VIII to XI describe which uses are allowed in which zoning districts.

Depending on the use and where it is located, various regulations may apply. Article XII use regulations mostly are specific to individual uses and provide standards that address a wide variety of use characteristics. Article XIII intensity and dimensional standards mostly address unit and lot size, setbacks, the location and height of buildings and structures, and the like. Article XIV development standards address parking, loading, and traffic; landscaping and fencing; floodplains and hazard areas; and operational limitations.

3. The code’s regulation of buffers and canopy

The code does, at varying degrees of depth and substance, address the notion of using natural features to serve as buffers. In one minor example, in the section on site plan approval standards for the riverfront special development district¹, the code states:

That the natural features of the landscape, particularly views of the Detroit River, are retained where they enhance the development of the site, or where they furnish a barrier or buffer between the project and adjoining properties, or where they assist in preserving the general safety, health, and appearance of the area or district. Removal of existing trees should be minimized.²

In another example, which arises occasionally in the code such as in the sections that are specific to cemeteries, gas stations, or agricultural uses, there are general requirements for buffers to address noise and viewshed.³

The two main instances, though, can be found in Chapter 61 as it relates to landscaping standards, and Chapter 57 as it relates to vegetation in public spaces.

3.1 Chapter 61: landscaping and screening

By far the code’s most concerted effort regarding buffers can be found in Article XIV, Division 2, which addresses development standards related to landscaping and screening.

3.1.1 Landscaping and screening generally

One of the stated purposes of the landscaping section is to:

Reduce potential nuisances by requiring a visual screen between uses to mitigate the adverse effects of wind and

¹ Art. XI, Div. 12.

² § 61-11-240.

³ §§ 61-12-200, 61-12-335, 61-13-16.

air turbulence, heat, noise, motor vehicle headlight glare and other artificial light intrusion, and other adverse impacts associated with adjoining or nearby uses.⁴

Clearly, then, Detroit already has in mind that vegetative landscaping can serve the purpose of buffering from various adverse impacts.

These landscaping standards apply in limited circumstances. Those are⁵:

- The construction of any principal building
- The addition to, or enlargement of, any principal building by either more than 2,000 square feet or 10%
- The construction or installation of any surface parking area that contains five or more off-street parking spaces or the addition of five or more off-street parking spaces to any existing surface parking lot or parking area
- Revisions to land or structures where the cost of work exceeds 60% of the assessed valuation
- Change of use of a property to a more intensive use (such as commercial to industrial)

Notably, application is forward-looking; the ordinance does not apply unless there is new construction or a material revision.

3.1.2 Landscaping and screening standards

There are relatively few restrictions on the kinds of plants to be used. There is a small prohibited species list.⁶ There are also basic size standards that apply to shrubs and trees. And trees near parking areas must be salt-resistant.⁷

There are a few standards that apply to installation and maintenance. For example, shrubs and trees cannot be installed where they will interfere with

⁴ § 61-14-191.

⁵ § 61-14-192.

⁶ § 61-14-204.

⁷ § 61-14-207(2)(f).

cars and doors.⁸ Also, any landscaping must be arranged so that it does not materially interfere with motorists' sight visibility, allows access to hydrants, and provides clearance for pedestrians and vehicles.⁹

The code contains landscaping requirements for trees that apply to specific situations:

- When it comes to off-street parking areas visible from a public street, there are specific standards.¹⁰ There must be a 5-foot wide buffer strip with at least one tree every 30 to 50 linear feet.¹¹ Where such buffer strips are not practical to provide, ornamental fencing can be substituted.¹²
- There are standards that apply specifically to interior landscaping for off-street parking areas visible from the road and that contain 25 or more parking spaces.¹³ For these, there must be a certain amount of landscaping depending on the number of parking spaces.¹⁴ One shade tree is to be planted for every 250 square feet of required landscaped area.¹⁵
- Parking structures must also incorporate landscaping, but no details are provided.¹⁶
- Where there are required setbacks from a public street, there must be one tree every 30 to 50 linear feet either in the setback or in the area between the sidewalk and the street.
- For new residential subdivision, street trees are required.¹⁷

⁸ § 61-14-207(1).

⁹ § 61-14-207(3)

¹⁰ § 61-14-221.

¹¹ § 61-14-221(1).

¹² § 61-14-221(2).

¹³ § 61-14-223.

¹⁴ § 61-14-223(1).

¹⁵ § 61-14-223(4).

¹⁶ § 61-14-225.

¹⁷ § 61-14-246.

With regard to all of the above, submission of alternative landscaping plans is permitted, though there are alternative plan compliance criteria that are strict and, at least on their face, require that any alternative chosen meet or exceed Division 2's stated purposes.¹⁸

3.1.3 Preservation of trees

The code does not contain much at all by way of tree preservation as it concerns private land development.¹⁹ In our review, we found only one provision that appeared to address tree preservation generally.²⁰ It is titled "Incentives to preserving existing tree" and it states in full:

The City encourages the preservation of quality and mature trees by providing credits toward the required landscaping as follows:

- (1) Trees intended to be preserved shall be indicated with a special symbol on the site plan and be protected during construction through use of a fence around the drip line. To obtain credit, the preserved trees shall be of a high quality and at least two and one-half inches (2-1/2") caliper. Trees to be preserved shall be counted for credit only where they are located on the developed portion of the site as determined by the review body or individual. Credit for existing trees is subject to review and approval by the Recreation Department; and
- (2) The credit for preserved trees shall be as follows. Any preserved trees receiving credit, which are lost within two (2) years after construction, shall be replaced with trees of a high quality and at least two and one-half inches (2-1/2") caliper.

¹⁸ §§ 61-14-248 to 61-14-250.

¹⁹ Chapter 57, for example, does contain some language about preserving trees that are located in public streets and spaces.

²⁰ § 61-14-247.

Caliper of Preserved Tree (in inches)	Number of Trees Credited
Over 12 inches at 4' above natural grade	3
8" – 11.9" at 4' above natural grade	2
2.5" – 7.9" at 4' above natural grade	1

Frankly, it is unclear what this ordinance provision means. There is no other mention of a credit system in Chapter 61 or anywhere else in the code. To the extent subsection (2) is intended as a tree replacement scheme, it is not clear how it works since without an outright requirement to preserve trees, there is no sense in which the credits would have value. That is, if the ordinance expressly only encourages preservation without requiring it, why would a developer feel incited to identify trees to be preserved pre-construction and then agree to replace them after construction if they are lost?

3.2 Chapter 57: Vegetation in public spaces

The other portion of the code that substantially addresses tree placement is Chapter 57, which is simply titled Vegetation. Chapter 57 has remained essentially unaltered since 1964 when it was first included in the code.

Chapter 57 almost exclusively governs trees that are within public highways²¹ and inside public places like parks, golf courses, and other recreation areas.²² It regulates how trees are to be planted, maintained, and

²¹ "all of the land lying between the property lines on either side of the public streets, boulevards and alleys of the city." § 57-2-1.

²² § 57-2-1.

if necessary destroyed. It places the city council and the Department of Parks and Recreation in control of implementation.²³

Chapter 57 is rather eclectic, perhaps in part due to the fact that it was authored many decades ago. It authorizes city council to order street tree planning through resolution as opposed to ordinance passage.²⁴ It also has provisions about the protection of shade trees, though it is never clear whether those provisions relate to shade trees generally or only those in streets and other public spaces.²⁵

What Chapter 57 does not do is require or even encourage the placement or preservation of trees on private property. Unlike Chapter 61, it has no provision defining its purposes and no real focus on buffering or screening.

4. Options for code improvement

With the objective in mind of evaluating the Detroit city code's suitability for requiring vegetative buffers and increased tree canopy, below are some options to consider for engagement with the city. There are excellent resources available that detail tree ordinance development²⁶; this report is intended not to provide those implementation details, but to identify priorities for code revision.

4.1 Preservation

The code is ineffective and too brief when it comes to tree preservation. Even if Chapter 57 is retained, it does not account for private development.

One could supplement the code with a multi-ordinance section devoted to tree preservation—perhaps in Article XIV Development Standards—that

²³ § 57-2-2.

²⁴ § 57-2-12.

²⁵ E.g. § 57-2-3.

²⁶ E.g. California Department of Forestry and Fire Protection, Urban Forestry Program, *Guidelines for Developing and Evaluating Tree Ordinances* (1999), available at <http://www.ufe.calpoly.edu/files/pubs/guidelines.pdf>.

requires (not simply encourages) preservation unless a developer can establish that preservation is technically or economically infeasible. In that case, the code can require tree replacement according to some standard depending on lot dimensions, land use, and zoning district.

There are numerous tree preservation ordinances that could be borrowed. West Bloomfield has a fairly comprehensive one that is specific about permitting and the replacement scheme.²⁷ At a minimum, there can be a simple, easy to administer no-net-loss standard to apply exclusively to the site at issue, so that at a minimum each lost tree is replaced with one or more trees that make for equal or greater value. One could also consider tree banking and credit trading schemes that can allow for flexibility for developers and potentially shift tree resources to areas that need them more than others. Any consideration of a banking and trading scheme would have to account for the potentially high costs of administration.

The relevant point is that Detroit has no effective comprehensive scheme for ensuring that trees are preserved or else replaced during the course of private land development. Such a scheme is needed.

4.2 Requiring buffers and canopy

With the exception of street trees, trees in public spaces, and trees to screen parking lots, there is little in the code that actually requires the development of buffers or canopy. There is not necessarily an express barrier, but the absence of such provisions in the code clearly needs to be addressed.

In a review of various ordinances and urban forest plans²⁸, the following stood out:

²⁷<http://www.bloomfieldtp.org/Services/PlanningBuildingOrdinance/PlanningDivision/TreePreservationOrdinance.asp>

²⁸ E.g. The Cleveland Forest Coalition, The Cleveland Tree Plan (Oct. 2015), and Tree Pittsburgh, Pittsburgh Forest Urban Forest Master Plan (Aug. 2012).

- Develop numeric urban canopy goals. Through areal imagery and on the ground surveys, it can be ascertained which areas are most in need of canopy growth. Percentage growth targets can then be established.
- Establish a set of ordinances that, apart from requiring tree preservation and replacement, also require buffers and canopy for new development and for certain kinds of redevelopment based on the city’s traditional zoning authority to protect the public health, safety, and welfare. This can be implemented in a variety of ways, though one obvious way would be to identify desirable tree-to-lot-size ratios depending on land use and zoning district. There can be additional specifications for location and arrangement to distinguish strategically placed buffers from general canopy contribution.
- Revise the already existing ordinances in Chapter 61 to allow for more screening trees.
 - At the moment, where screening trees are required along offstreet parking lots, one must be placed every 30-50 feet. To the extent technically feasible, that distance could be reduced to allow for more trees.
 - Detailed criteria could be added to § 61-14-221(2) to better define when the ornamental fence substitution can be used.
 - Specific standards can be added to the requirements for street trees in residential developments from § 61-14-246, and for parking structure landscaping from § 61-14-225.

4.3 Environmental justice

There is a great deal of literature that demonstrates the value of canopy to environmental justice (“EJ”) communities.²⁹ Heat islands, energy costs, and

²⁹ Watkins, Shannon Lea, et al., *Is Planting Equitable? An Examination of the Spatial Distribution of Nonprofit Urban Tree-Planting Programs by Canopy Cover, Income, Race, and Ethnicity*, Environment and Behavior (2016); Carmichael, Christine, *The Trouble with Trees? Social and Political Dynamics of Greening Efforts in Detroit, Michigan*, Michigan State University Department of Forestry (2016); Schwarz K., et al., *Trees Grow on Money: Urban Tree Canopy Cover and Environmental Justice*, PLoS ONE

property value are problems that are pronounced in urban areas, particularly EJ communities located there. Canopy helps to combat heat island effect, provide shade that facilitates energy efficiency, and can increase the aesthetic value of certain neighborhoods.

First, any revision of the purposes and objectives portions of the code should expressly include the EJ function that canopy can play. Second, should Detroit ever adopt an EJ ordinance the way other cities have³⁰, that EJ ordinance could itself require a certain level of buffer and canopy depending on the EJ indicators of the particular neighborhood.

4.4 Institutions

Various already existing and new institutions can play a role in requiring more buffers and canopy.

4.4.1 City Council

Obviously, city council is the institution that must revise current ordinances and enact new ones. Also, from a procedural perspective, city council can generate momentum through passing resolutions. The resolution could identify buffers and canopy as playing multiple roles including a public

(2015); Danford, Rachel S., et al., *What Does It Take to Achieve Equitable Urban Tree Canopy Distribution? A Boston Case Study*, *Cities and the Environment*, Vol. 7, Issue 1, Art. 2 (2014); Nowak, D.J. and Dwyer J.F., *Understanding the Benefits and Costs of Urban Forest Ecosystems, Urban and Community Forestry in the Northeast*, Springer Netherlands, 25-46 (2007); Rosenzweig, C., et al., *Mitigating New York City's Heat Island with Urban Forestry, Living Roofs, and Light Surfaces*, A report to the New York State Energy Research and Development Authority (2006); McPherson, E.G. and Simpson J.R., *Potential Energy Savings in Buildings by an Urban Tree Planting Programme in California*, *Urban Forestry & Urban Greening* 2.2, 73-86 (2003).

³⁰ E.g. Newark, New Jersey

(<https://newark.legistar.com/LegislationDetail.aspx?ID=2770971&GUID=D0C566D0-463A-482D-A4AC-78884351DA79&FullText=1>); Cincinnati, Ohio (https://www.municode.com/library/oh/cincinnati/codes/code_of_ordinances?nodeId=TI_TXENCO_CH1041ENJU_S1041-9EJFA); and Minneapolis, Minnesota (<https://www.pca.state.mn.us/air/air-permitting-south-minneapolis>).

health role, call for an inventory of tree assets in the city that are located in areas where there is significant acute and chronic exposure to air pollution, and chart a course for future council action on the relevant issues.

4.4.2 Business Improvement Districts

Michigan's legislature long ago authorized the creation of "principal shopping districts" and "business improvements districts" ("BIDs") to allow geographically delineable commercial neighborhoods to have a quasi-public body that provides services such as landscaping and marketing.³¹ BIDs operate according to 10-year plans and finance their services through property assessments.

Detroit has a BID called the Downtown Detroit Business Improvement Zone ("DDBIZ").³² It is approximately 1 square mile in size and is bounded by the highways and the river. Among other things, DDBIZ works to provide landscaping services along streets and in green spaces such as Campus Martius.³³

BIDs can be an institutional tool for both buffer and canopy development. BIDs in Los Angeles and Denver have already been utilized to increase tree volume in ways that address public health and other concerns.³⁴ The Uptown Business Improvement District Authority in Grand Rapids has made canopy one of the focal areas for its landscaping services.³⁵

³¹ Codified at MCL 125.990 to 125.990n.

³² <http://downtowndetroit.org/biz/>

³³ <http://downtowndetroit.org/biz/services/green/>

³⁴ City of Los Angeles California, "REPORT FROM CITY PLANNING ON SOUTH PARK BID RECOMMENDED TREES PALETTE," http://clkrep.lacity.org/onlinedocs/2015/15-0547-S3_rpt_PLAN_03-11-2016.pdf (last visited March 28, 2017); Downtown Denver Partnership, Inc., "PARTNERSHIP AND BID NOW MANAGE THE CARE OF 1,000 TREES IN DOWNTOWN DENVER," <http://www.downtowndenver.com/homepage/partnership-and-bid-now-manage-1000-trees-in-downtown-denver> (last visited March 28, 2017).

³⁵ <http://grcity.us/design-and-development-services/Economic-Development/Uptown%20BID/Uptown%20BID%20Agenda%20Packet%2012-02-15.pdf>.

They have the unique advantage of being hyperlocal and well connected to the local building owners and developers. Because BIDs finance through property assessment, it may only make sense for them to operate in relatively dense commercial areas. That can function to limit their numbers, but need not limit their effectiveness in the areas they do operate in.

The DDBIZ can do more to specifically require buffers and canopy, in part by using something like the standards outlined in section 4.2. Should there be creation of additional BIDs in Detroit, they can do the same.

4.4.3 Urban forestry office

One should consider a separate division to implement a comprehensive plan to increase buffers and canopy. That could be as elaborate as an urban forestry office that is distinct from pre-existing divisions such as BSEED and Parks & Recreation. It could also be as simple as creating an urban forester position housed in a pre-existing division with, among others, a specific task of regulating buffers and canopy on mostly private land.

4.4.4 Enforcement entities and citizen monitoring

There are already laws on the books—mostly in Chapters 57 and 61—that BSEED and Parks & Recreation enforce. While it may not yield a great deal of return on investment, prior to development of new standards there could be education about the current ones to better allow community members to bring examples of noncompliance to the attention of the ordinance enforcement entities. That way, to the extent there are missing buffers and street trees, the enforcement entities may be able to correct the problem.

4.4.5 Advisory committees

Interestingly, the zoning chapter at Article II, Division 7 is devoted to the creation of advisory review committees. There are six in all: industrial, loft,

See also

https://www.michigan.gov/documents/mdot/MDOT_TDIFinalPaper_440954_7.pdf.

hazardous waste facility, solid waste facility, floodplain management, and wireless telecommunications site.³⁶

As the name suggests, these committees are primarily responsible for advising city government about the development of zoning categories and about the permitting of individual facilities and sites within zoning districts. They are interagency in nature and have representatives from a broad spectrum of local government.

As an example, the industrial review advisory committee advises BSEED and the Board of Zoning Appeals “by reviewing and making recommendations regarding the advisability of permitting” certain industrial conditional uses.³⁷ The committee’s tasks include review and investigation of socioeconomic impacts, industry standards, and environmental impacts.³⁸ Interestingly, another express task is to consider the “[s]eparation/buffering from sensitive, conforming land uses” such as residences, churches, parks, and other such sites.³⁹

These advisory committee ordinances were enacted in 2005 and appear to still be in the code as of August 2016. However, it is unclear whether they were ever or are today actually in use.

The purpose of noting them is twofold. First, it demonstrates that the city has a strong express interest in buffering to mitigate the impacts of various kinds of activity, especially industrial. Second, whether active or not, they provide an idea for an institutional framework that would be useful to the notion of vegetative buffers and even canopy more generally. Assuming the committees are or become active, one can imagine directing them to include in their buffer review the suitability of vegetative buffers and canopy. One can also imagine establishing a forestry advisory committee

³⁶ § 61-2-71.

³⁷ § 61-2-84(a).

³⁸ § 61-2-84(b).

³⁹ § 61-2-84(b)(5).

that can advise various departments on buffer and canopy during the permitting process for certain uses.

4.4.6 BSEED enforcement

BSEED is primary responsible for enforcing the zoning laws.⁴⁰ Article V of the code defines what violates the code and how violations are enforced. Financial penalties are specified in the code itself.⁴¹ BSEED also has the authority to revoke permits, issue stop work orders, and seek a court order for injunctive relief.⁴²

One option for revising the ordinance to facilitate buffers and canopy is to expressly authorize BSEED to enforce the code against violators through settlement agreements that require the implementation of supplemental environmental projects or SEPs. SEPs exist at the federal and state level for the implementation of pollution control laws such as the Clena Air Act.⁴³ has the authority to enter into settlement agreements with violators. One purpose of supplementing fines and abatement with SEPs is to allow the community in which the violation took place to receive a benefit as a way to offset any past harm. It is conceivable that with a properly worded ordinance, BSEED could have the authority to resolve certain zoning violations by, for example, requiring the violator to plant trees in the neighborhood in addition to any fines and necessary abatement.

⁴⁰ § 61-5-1.

⁴¹ E.g. § 61-5-20.

⁴² §§ 61-5-33 to 61-5-37.

⁴³ E.g. Michigan's SEP policy, available at

https://www.michigan.gov/documents/deq/deq-occc-sup-env-projects-penalty-mitigation_248504_7.pdf.