City of Dallas

ZONING ORDINANCE ADVISORY COMMITTEE (ZOAC)

Tuesday, August 1, 2023
9:00 a.m.

A G E N D A

The Zoning Ordinance Advisory Committee meeting will be held by videoconference at https://bit.ly/ZOAC-0801 and in person in Room 6ES at Dallas City Hall, 1500 Marilla Street, Dallas, TX 75201.
The public is encouraged to attend the meeting virtually with access code: 2496 485 0671 or by calling (469) 210-7159 / Event Password: ZOAC0801 (96220801 from phones and video systems)

*Individuals who wish **to speak** on an agenda item must sign-up by **12:00 p.m. (noon) Sunday, July 30** by visiting https://forms.office.com/g/PCdcrRFtc2 and must have their **camera on** when speaking virtually. To request an interpreter, please email Sarah.May@dallas.gov at least three business days in advance of a meeting. Late requests will be honored, if possible.*

Para solicitar un intérprete, mande un correo electrónico a Sarah.May@dallas.govSarah.may al menos 3 días laborales antes de una reunión. Solicitudes con retraso serán respetadas, si es posible.

DISCUSSION:

(1) DCA212-008
Lori Levy

Consideration of amending Chapters 51 and 51A of the Dallas Development Code, Sections 51A-2.102 “Definitions”, 51-4.111; 51A-4.111 “Agricultural A(A) District” through 51A-4.117 “Manufactured Home MH(A) District”; 51A-4.209 “Residential Uses”; 51A-4.301 “Off-Street Parking Regulations”, 51A-4.407.1 “Maximum Impervious Coverage”, 51A-10.125 “Mandatory Landscaping Requirements”, 51A-10.127, “When Landscaping Must Be Completed”, and related sections to consider developing appropriate standards associated with impermeability, permeability, pervious and impervious surfaces, including, but not limited to definitions, paving, surfaces, materials, and applicability.

OTHER MATTERS:

(2) Approval of meeting minutes from July 18, 2023.

ADJOURNMENT.

Handgun Prohibition Notice for Meetings of Governmental Entities

"Pursuant to Section 30.06, Penal Code (trespass by license holder with a concealed handgun), a person licensed under Subchapter H, Chapter 411, Government Code (handgun licensing law), may not enter this property with a concealed handgun."

"De acuerdo con la sección 30.06 del código penal (ingreso sin autorización de un titular de una licencia con una pistola oculta), una persona con licencia según el subcapítulo h, capítulo 411, código del gobierno (ley sobre licencias para portar pistolas), no puede ingresar a esta propiedad con una pistola oculta."

"Pursuant to Section 30.07, Penal Code (trespass by license holder with an openly carried handgun), a person licensed under Subchapter H, Chapter 411, Government Code (handgun licensing law), may not enter this property with a handgun that is carried openly."

"De acuerdo con la sección 30.07 del código penal (ingreso sin autorización de un titular de una licencia con una pistola a la vista), una persona con licencia según el subcapítulo h, capítulo 411, código del gobierno (ley sobre licencias para portar pistolas), no puede ingresar a esta propiedad con una pistola a la vista.

A quorum of the City Plan Commission may attend this Zoning Ordinance Advisory Committee Meeting.

ZONING ORDINANCE ADVISORY COMMITTEE **TUESDAY, AUGUST 1, 2023**

Planner: Lori Levy, AICP

FILE NUMBER: DCA212-008(LL) **INITIATED:** Summer 2022

TOPIC: Development Code Amendment to consider developing appropriate standards associated with impermeability, permeability, pervious and impervious surfaces, including, but not limited to definitions, paving, surfaces, materials, and applicability.

COUNCIL DISTRICT: All **CENSUS TRACTS:** All

PROPOSAL: Consideration of amending Chapters 51 and 51A of the Dallas Development Code, Sections 51A-2.102 "Definitions", 51-4.111; 51A-4.111 "Agricultural A(A) District" through 51A-4.117 "Manufactured Home MH(A) District"; 51A-4.209 "Residential Uses"; 51A-4.301 "Off-Street Parking Regulations", 51A-4.407.1 "Maximum Impervious Coverage", 51A-10.125 "Mandatory Landscaping Requirements", 51A-10.127, "When Landscaping Must Be Completed", and related sections to consider developing appropriate standards associated with impermeability, permeability, pervious and impervious surfaces, including, but not limited to definitions, paving, surfaces, materials, and applicability.

SUMMARY: The proposed code amendments are intended to address the compatibility of impervious surfaces in the front yard of residential districts and will align the Dallas Development Code with the Comprehensive Environmental & Climate Action Plan (CECAP) goal of reducing the environmental impacts of stormwater run-off, such as flooding, and the heat island effect.

STAFF RECOMMENDATION: **Hold under advisement.**

CODE AMENDMENT WEBPAGE:
https://dallascityhall.com/departments/pnv/Pages/Code-Amendments.aspx

APPENDICES

1. Current Yard, Lot and Space Regulations for Residential Districts - Division 51A-4.110. Residential District Regulations. (amlegal.com)
2. Complete Streets Map
3. Comparison Cities
4. Heat Maps for Impervious Surfaces

BACKGROUND INFORMATION:

- On July 7, 2022, CPC authorized a code amendment initiated by Commissioners Hampton, Standard, and Anderson to consider developing appropriate standards associated with impermeability, permeability, pervious and impervious surfaces, including, but not limited to definitions, paving, surfaces, materials, and applicability.
- On March 22, April 8, May 5, 8, and 25, June 13, 14, and 16, and July 5, 2023, PUD staff met with various internal departmental staff to get input on the impervious coverage code amendment.
- On April 27, 2023, staff had discussions with Commissioner Hampton to get an understanding of the intent of the code amendment from the Code amendment initiators. Items from those discussions, included:
    - a possible definition for maximum impervious surface stated as: The purpose of the maximum impervious surface definition is to protect surface water quality and the health and safety of residents by promoting appropriate development considerations regarding onsite permeable area, rainwater management, storm water quality control and mitigation of heat island effect;
    - maximum impervious area versus minimum permeable surfaces requirements, stormwater/rainwater management, storm water quality/control, site retention, and green infrastructure;
    - the following potential definition for impervious surface: A surface which has been covered with a layer of material so that it is highly resistant to infiltration by water;
    - Other considerations for staff to address included:
        - Buildings, driveways, garage, porches, patios, private walks, accessory building, and any other impervious surfaces constructed on the lots.
        - If highly compacted surfaces which may contribute to run-off materials such as gravel, permeable pavers, or permeable concrete are still considered impervious.
        - Define how water features (fountains, pools, etc.) are to be calculated.
- On May 25, 2003, staff conducted outreach meetings with representatives from Texas Real Estate Commission (TREC) and the Dallas Builder's Association

(DBA), and it was suggested that we also reach out to representatives of both MetroTex Realtors and the Apartment Association of Greater Dallas (AAGD).

- On June 12, 2023, staff met with the directors of MetroTex Realtors and AAGD,to discuss some preliminary ideas. Staff agreed to forward the draft recommendations, data from other cities, and timeframe for public meetings for the code amendment to their directors to disseminate the information to the membership for feedback.

EXISTING REGULATIONS AND POLICIES:

Current City Codes Relevant to Impervious Surface Regulations

Chapters 51 and 51A of the Dallas Development Code do not have specific limitations on maximum impervious surface or coverage like many comparison cities. However, there are some relevant and related regulations to encourage the reduction of impervious surfaces.

- Article X of the Dallas Development Code: Landscaping Regulations

  The landscaping regulations (Article X) of the Dallas Development Code contains parameters around what can be placed in required landscaped areas and, for all uses other than single family and duplex uses, when 2,000 square feet of impervious paving is added, landscaping requirements are triggered. Additionally, some planned development districts may have limits in impervious surfaces or modifications to landscaping requirements and some conservation districts have some varying limitations on impervious surfaces.

- Article IV of the Dallas Development Code: Other Yard, Lot, and Space Regulations

  Although there is nothing currently in the overall Dallas Development Code to specifically define or limit permeability or impervious coverage, the Development Code regulates some features that are closely related such as front, side, and rear yard setbacks, minimum lot area, lot width, lot depth, maximum height, maximum floor area and maximum lot coverage. The amount of impervious coverage is not considered in the calculation of lot coverage. Lot is defined as a building site that fronts on a public or private street, except that in the case of a planned development district, the building site may front on an access easement, and in the case of a shared access development, the building site may front on a shared access area. Coverage is defined as the percentage of lot area covered by a roof, floor, or other structure, except that roof eaves up to 24 inches and other ordinary

building projections up to 12 inches are excluded. Subsection (a) General provisions of Sec. 51A-4.401 Yard, Lot and Space Requirements provides that:

(1) Required front yards must be open and unobstructed except for fences and light poles 20 feet or less in height. Except as otherwise provided in this section, ordinary projections of window sills, belt courses, cornices, and other architectural features may not project more than 12 inches into the required front yard. A fireplace chimney may project up to two feet into the required front yard if its area of projection does not exceed 12 square feet. Cantilevered roof eaves and balconies may project up to five feet into the required front yard.

(2) The front yard setback is measured from the front lot line of the building site or the required right-of-way as determined by the thoroughfare plan for all thoroughfares, whichever creates the greater setback.

Per Sec. 51A-4.401 1(c) Schedule of maximum lot coverage, a person shall not erect, alter, or convert any structure or part of a structure to cover a greater percentage of a lot than is allowed in the district regulations.

Stormwater Drainage Utility

For city-wide codes, the most relevant requirements for impervious coverage in the Dallas City Code currently is in Chapter 2, Article XXVIII, Stormwater Drainage Utility, which specifies how stormwater fees should be calculated on water bills and is based on the amount of impervious surface on a lot.

Related Policies

Data from the Dallas Council adopted Comprehensive Environmental Climate Action Plan (CECAP), the Environmental Protection Agency (EPA), and the heat maps attached in the Appendices from the Trust for Public Lands, shows that impervious surfaces exacerbate flooding due to lack of adequate infiltration of water into the soil from rainfall, runoff, and stormwater, and also contribute to hotter temperatures from the heat island effect. The heat island effect is the result of urbanized areas experiencing higher temperatures than outlying areas caused by heat from the sun that is absorbed and re-emitted more than natural environments or landscapes, such as forests and water bodies due to structures such as buildings and infrastructure, such as roads, bridges, and parking lots[1].

[1] Heat Island Effect | US EPA.

The code amendment to address the lack of requirements for impervious coverage will align the Dallas Development Code with the Comprehensive Environmental & Climate Action Plan (CECAP) goal of reducing the environmental impacts of stormwater runoff, such as flooding, and the heat island effect by reducing stormwater runoff that contributes to flooding and the heat island effect.

Addressing the lack of impervious coverage requirement will also help to provide more equity in Dallas as many disadvantaged or low-income areas tend to have more impervious coverage or paving leaving these areas more prone to flooding and less shade from the excessive heat.

By addressing impervious coverage requirements in the front yard, it limits the amount of impervious paving and will allow homeowners and builders more flexibility in providing more useable space to fit their needs and lifestyles, such as front porches, and gardens that foster a sense of community and add more eyes on the street to possibly deter crime.

Resident Concerns

One document that spurred CPC's decision to initiate a hearing on this subject originated from a Dallas resident. The document described concerns about stormwater runoff, flooding, the heat island effect, and compatibility issues with respect to existing residential development. Since the issues pertain mainly to residential development and the Dallas Development Code does not have requirements regarding impervious surface coverage, the recommendations for this subject focus on residential districts.

Photo Credits: Dallas Resident

STAFF ANALYSIS AND RECOMMENDATIONS:

Staff recommends establishing a new definition ("impervious coverage"), adding a maximum percentage standard for impervious surfaces of front yards for residential districts, establishing a lower base maximum percentage without additional design standards, incentivizing desired design standards with additional percentage allowances with administrative review and special exception options.

To allow these new restrictions to be more feasible, staff recommends reducing the parking requirement for the residential districts and eliminating the distance requirement from enclosed structures to an alley. Additionally, staff recommends including impervious coverage as an option to be regulated more strictly within Neighborhood Stabilization Overlays.

Finally, because impervious surfaces are closely linked with landscaping requirements staff also recommends updating a few landscaping items to enhance what will be within the pervious front yard areas. Staff will discuss these items in detail in this report.

1. <u>Definition</u>

In determining an appropriate definition for impermeable coverage, staff considered permeability[2] and other sections of the Dallas Development Code for potential conflicts

[2] Permeability is a physical property of soil and is defined as the rate of water movement through interconnected pores within soil or rock. Permeability describes how fast or easily water can move from one

and applicability with respect to zoning. Staff considered the potential definitions from stakeholder input as well as the following definitions as contained in Sec. 2-168. Definitions; Stormwater Drainage Utility Rates; Exemptions; Incentives for Residential-Benefitted Properties; Billing And Collection Procedures Of Article XXVIII. Stormwater Drainage Utility.

> (6) IMPERVIOUS AREA means any surface that prevents or substantially impedes the natural infiltration of stormwater into the ground, and includes, but is not limited to, roads, parking areas, buildings, patios, sheds, driveways, sidewalks, and surfaces made of asphalt, concrete, and roofing materials.
>
> (8) STORMWATER means rainfall runoff, snow or ice melt runoff, or surface runoff and drainage.

Staff also reviewed regulations on impermeable surface limitations found within several conservation districts. However, since these definitions were inconsistent between varying conservation districts, none were used as a basis for this recommendation.

Staff reviewed the zoning definitions of impermeable area or coverage of the comparison cities and found the term varied significantly nation-wide. The terms used for the definition varies widely from Impervious Cover, Impervious Surface, Lot and Impervious Surface Coverage, Impermeable Coverage, Permeable Surface, and Nonpermeable. Regarding which exact term to use in this report, staff has been using the term “impervious coverage” but is open to other terms comparison cities have used.

Staff Recommendation on the Definition

Staff determined that the definitions in Sec. 2-168 of Article XXVIII, Stormwater Drainage Utility was more narrow than desired since it concluded with surfaces made of asphalt, concrete, and roofing materials, whereas staff believes other inorganic surfaces that compact soils and impedes natural infiltration of stormwater was appropriate to include in what impervious coverage could mean. Therefore, staff recommends the following definition:

> IMPERVIOUS COVERAGE means any surface that prevents or substantially impedes the natural infiltration of stormwater into the ground, and includes, but is not limited to hardscape surfaces such as asphalt, concrete, wood, crushed granite, pavers, synthetic turf, compacted soil or rock, and similar surfaces. Linear

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point to another underground Porosity and Permeability Definition & Overview | What Is Soil Porosity? - Video & Lesson Transcript | Study.com

borders such as landscape barriers, retaining walls, and fences are excluded in these calculations.

2. Applying Maximum Impervious Coverage to Residential Front Yards

Staff researched a total of 22 cities (Addison, Arlington, Austin, College Station, El Paso, Frisco, Ft. Worth, Houston, Lancaster, Richardson, Rockville, San Antonio, San Jose, University Park and Georgetown) of which seven are index cities (Atlanta, Baltimore, Boston, Minneapolis, San Diego, San Francisco, and Seattle) for regulations pertaining to impervious coverage or area. 16 of the 22 comparison cities that staff researched limit impervious paving or hardscape areas with a specific percentage that is required within front yards of residential districts and impervious paving or hardscape limits for non-residential districts in the zoning regulations in order to address these climate impacts in urbanized areas.

The other six cities also regulate impervious areas in residential districts without specifying a percentage of impervious area (driveways, paving, hardscape). Houston and Seattle charge drainage utility fees based on the amount of impervious area for residential development. Arlington and Lancaster require some landscaping for single family detached and attached residential development. Arlington, Lancaster and San Antonio also have open space area requirements for townhouse and multifamily. Boston requires groundwater retaining paving systems for groundwater capture rates >1.0 to limit the impervious areas.

Of the 22 cities that staff researched, only Baltimore limits the impervious area both within the front and rear yards for row houses in the residential districts.

Frisco includes the limitation for impermeable surface in the Front Yard Coverage definition, defined as “the cumulative area of any driveway plus any impermeable surface area located between the front property line and any front building wall shall not exceed fifty (50) percent of the area between the front property line and any front building wall.” Richardson includes the limitation for impermeable surface area in the Lot Coverage definition, defined as “the cumulative area of any driveway plus any impermeable surface area located between the front property line and any front building.” Arlington, Austin, Fort Worth, Minneapolis, and San Diego do not have a specific definition. See the list of definitions for some of the comparison cities in the Appendices.

Staff’s research on this subject focused on the nature of the issues described and to define the problem that prompted the initiation of this separate code amendment. Since maximum impervious coverage is included as part of the design standards in the separate and upcoming parking code amendment, the focus of this amendment will primarily be in residential districts. Therefore, recommendations for impervious coverage for

nonresidential districts would be best addressed with the upcoming parking code amendment to allow a more productive and engaged conversation. It should be noted that amendments in the upcoming parking code amendment case may include both residential and nonresidential uses.

Staff Recommendations to Apply Maximum Impervious Coverage in Residential Front Yards:

Staff recommends adding a standard for impervious coverage of front yards for residential districts which is intended to reduce stormwater runoff that contributes to flooding and the heat island effect and also addresses compatibility of existing development. Since there are already other ordinances in place that prohibit a property from diverting stormwater onto an adjacent property that can address the rear and side yards, staff recommends the impervious coverage requirements on residential properties to be limited to front yards.

Additionally, restricting the front yard and not the entire lot or other yards will afford homeowners the flexibility to use their backyards and property to fit their needs, because mathematical calculations are less difficult. Finally, only limiting the front yard will facilitate implementation and compliance with these requirements since it is relatively easy to visually observe and calculate by knowing the lot width and multiplying that by the setback and then focusing on the area calculation of paving/hardscape surface within that area.

3. Impervious Coverage Percentage

Of the 16 cities that require maximum percentages of impervious area within the front yard of residential districts, six cities (Baltimore, Fort Worth, Frisco, Richardson, San Francisco, San Jose) limit it to 50 percent in the front yard for all residential districts, and one city (College Station) limits it to 50 percent for most of the R districts that correspond to Dallas' R-7.5(A) and R-10(A) districts with average lot sizes. University Park limits it to 52 percent for the R districts. Georgetown requires 45 percent for most R districts. Two cities, Austin and Rockville require 40 percent for most of the R districts that correspond to Dallas' R-7.5(A) and R-10(A) districts with average lot sizes.

Staff Recommendations for Impervious Coverage Percentage

Based on our research, staff recommends a base maximum with a conservative maximum impervious area that includes no design standards and an increased allowance that can be approved administratively when design standards are implemented to incentivize design. Initial maximums recommended is 30 percent for the Agricultural district since the minimum front yard setback is 50 feet and the lots tend to be wider and more rural, and 40 percent for the remaining residential districts (R(A), D(A), MF(A),

MH(A), TH(A) and CH districts), with up to an additional 10 percent maximum possible to incentivize desired design standards in any of the listed districts except when located on a parkway street as, as defined by the Complete Streets Design Manual, to add in additional protection for those street types identified as needing additional stormwater considerations.

4. Incentivizing Design Standards

The Dallas Development Code currently only has requirements for driveway access, garage placement and design on the lot in Article XIII Form Districts, Sec. 51A-13.304 Development Types, (h) Manor House. The Code does not have requirements or incentives for desired design standards for driveway access, garage placement or design on the lot other than the form districts. There are currently no requirements or incentives in the Code for the amount of impervious or pervious paving or green infrastructure. The EPA defines green infrastructure as the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters[3].

Of the total 22 comparison (Addison, Arlington, Austin, College Station, Frisco, El Paso, Ft. Worth, Houston, Lancaster, Richardson, Rockville, San Antonio, San Jose, University Park and Georgetown) and index cities (Atlanta, Baltimore, Boston, Minneapolis, San Diego, San Francisco, and Seattle) staff researched, eight cities have design standards for driveways, driveway access, garage placement, and/or landscaping for residential districts. Lancaster requires residential garages in single family or duplex districts to be located off an alley, or if accessed from the front street to be located at least 20' feet behind the closest corner of the front building façade for front entry garages unless it is a "J-Swing" garage door that is perpendicular to the street and only allows J-Swing garages on lots at least 60' feet wide. Arlington, San Diego, Seattle, and University Park have minimal landscaping requirements. Austin, University Park, Baltimore, and Rockville have driveway design standards. Rockville also allows additional driveway width if pervious paving is used or allows an increase in the amount of impervious paving with lesser driveway widths. See the Comparison Cities tables for Maximum Impervious Coverage Percentages in the Appendices attached.

Incentivizing desired design standards for additional percentages of impervious coverage will help the homeowners and builders to achieve the impervious coverage limitations, provide some flexibility in designing the layout on the lot and helps the City achieve the desired design standards.

[3] What is Green Infrastructure? | US EPA

Staff Recommendations for Incentivizing Design Standards

Staff recommends incentivizing improved design by allowing additional impervious coverage up to an additional 10 percent in a residential district when the site does not front on a parkway street, as defined in the Complete Streets Design Manual, as amended, and incorporates design criteria for garages or green infrastructure techniques as described below.

Staff does not recommend additional impervious coverage percentage for sites fronting onto parkway streets since the parkway streets have been classified as streets that follow environmentally, vulnerable flood-prone areas and watersheds in Dallas[4]. See a copy of the Complete Streets Vision Map for Parkway Streets in the Appendices attached.

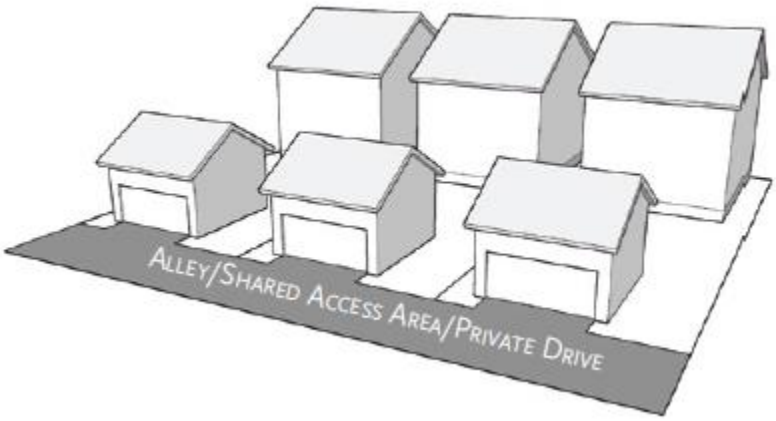
The below items were sourced from some of the Form District development standards for a Manor House Development Type, found in Sec. 51A-13.304 Development Types, (h) Manor House and is provided as a reference that may be further refined in upcoming reports.

1. Garage Placement for single family, handicapped group dwelling unit, and duplex uses.

(A) Alley Provided.

- When an alley is provided and developed, all vehicular access must take place from the alley. On corner lots, access may be taken from the side street, in which case the garage door may face one street with the shortest block face.

- If the garage is less than 20 feet from the alley, an automatic garage door opener is required.



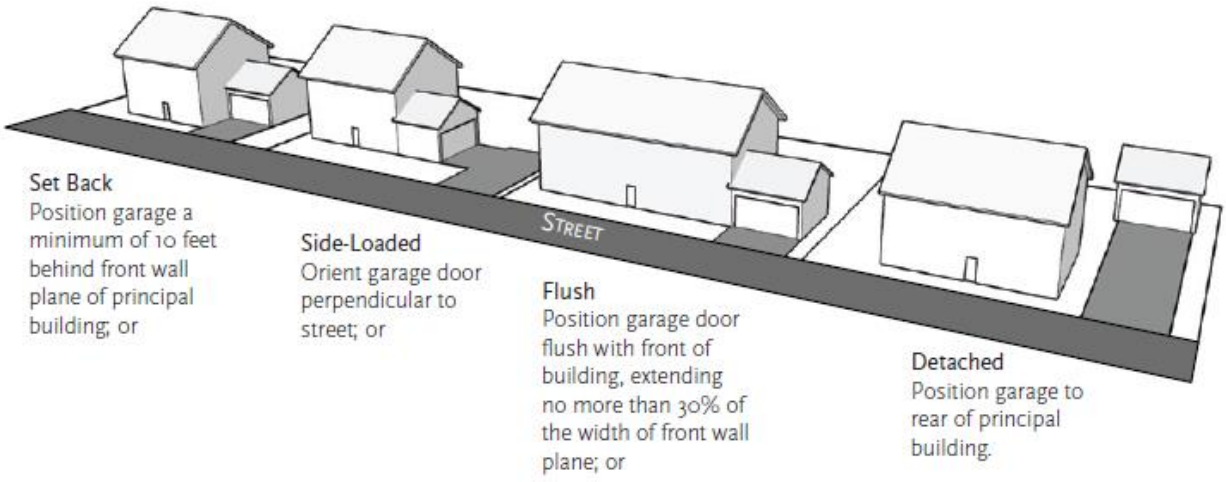
[4] https://dallascityhall.com/departments/pnv/DCH%20Documents/DCS_ADOPTED_Jan272016.pdf.

(B) No Alley Provided.

- When an alley is not provided or developed, street-facing garages may be positioned as shown below.

- If the garage is less than 20 feet from the street, an automatic garage door opener is required.

- When paving is permeable as approved per the Street Design Manual, as amended, driveway width may be up to a maximum of 20 feet. Otherwise, driveways must be a maximum of 12 feet in width.



2. Green infrastructure techniques designed per the Street and Drainage Design Manual, as amended. Permeable Surfaces are required to be contained so neither sediment nor the permeable surface material discharges off the site.

Additionally, staff recommends adding a provision to allow the board to grant a special exception to impervious coverage when unique or challenging conditions exist and there is little to no neighborhood opposition.

Incentivizing vehicular access from the alley, or wider driveways when permeable pavement is used will provide the homeowners and builders some flexibility in having other impermeable structures or elements in the front yard such as porches or pedestrian pathways, and gardens while still allowing the City to meet the desired percentage of no more than 50 percent impervious coverage in the front yard. Green infrastructure techniques, such as grasscrete and pervious paving help the homeowners and the City to achieve the desired infiltration of rainwater into the soil while allowing creativity, beauty and potential habitat for the homeowner to enjoy.

5. Reduced Parking Requirements

Per Sec. 51A-4.300 Off-Street Parking and Loading Regulations, off-street parking is an accessory use and the location and outlines the prescribed design of required off-street parking spaces in all zoning districts. The minimum amount of off-street parking spaces for each residential land use, such as single family, duplex, multifamily group residential facility, handicapped group dwelling unit, and manufactured home park or campground is specified in Sec. 51A-4.209 Residential Uses and summarized below[5].

- Single family and handicapped group dwelling unit: Two off-street parking spaces are required in the A(A), D(A), R-1ac(A), R-1/2ac(A), R-16(A), R-13(A), and R-10(A) residential districts; one off-street parking space is required in the R-7.5(A), R-5(A), TH(A) districts.
- Duplex: Two off-street parking spaces per dwelling unit (i.e. four spaces) are required.
- Multifamily: One off-street parking space per bedroom with a minimum of one off-street space per dwelling unit. An additional one-quarter off-street space per dwelling unit for guest parking is also required if the guest parking is restricted to residential parking only.
- Manufactured home park or campground: One-and-one-half off-street parking spaces for each transient stand or each lot in a manufactured home subdivision is required.

Because these uses require a minimum of more than one space per dwelling unit, which may not be designed in tandem, the current regulations often result in a two-car garage and very wide driveways. Therefore, a reduction in minimum off-street parking requirements for any residential use above one space per unit, at a minimum, should be considered in conjunction with adding restrictions on impervious surfaces in the front yard in residential districts.

Residential parking data from comparison and index cities obtained from the future parking code amendment and other code amendments, and from our housing department show that no more than one parking space per unit should be required for residential development, if any parking space requirements are specified. Many of our comparison and index cities across the nation have eliminated required parking spaces, thus allowing parking to be designed to fit the needs for the development. What we have learned from various parking studies is that parking spaces are expensive, at approximately $20,000 per parking space, are often unused – taking up valuable real estate and driving up the

[5] Division 51A-4.110. Residential District Regulations. (amlegal.com).

cost of housing which is already expensive and unobtainable by many low-income earners – and contributes to stormwater runoff and the heat island effect.

One of the Council approved Comprehensive Climate Action Plan (CECAP) stated goals is to reduce the number of impaired waterbodies in the listed watersheds, including actions for PUD to take in the three-year implementation work plan to reduce the environmental impacts of stormwater runoff, such as flooding, and the heat island effect[6]. As stated in the Plan and in studies from the Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), and the Trust for Public Lands, to name a few, impervious paving such as concrete and asphalt for parking spaces and associated vehicular access for such parking that replaces natural areas reduces the area where infiltration to groundwater can occur and causes stormwater runoff that contributes to both flash flooding and the heat island effect[7].

The City of Dallas, like many urban cities across the nation also has a housing shortage and a lack of affordable housing. One of the goals of the City's Comprehensive Housing Policy is to increase affordable housing units across the City. According to numerous parking studies conducted by Urban Land Institute (ULI), Congress of New Urbanism (CNU), engineer, professor in urban planning and named one of the 100 most influential urban planners, and author of The High Cost of Free Parking, Donald Shoup, and other industry professionals, parking spaces raise the cost of development, including housing and that cost is reflected in the housing prices contributing to unaffordable housing.

The Dallas City Council has also recently adopted the Racial Equity Plan with equity indicators to be included within plans and projects across departments. One of the issues identified within the Racial Equity Plan was the vast amount of paving or lack of green space in the lower income or disadvantaged neighborhoods in Dallas that has the effect of a greater risk of flooding, higher air temperatures with few opportunities for shade and poorer health outcomes, such as asthma and heat-related illness often associated with these factors.

Staff Recommendations for Reduced Parking Requirements

Since maximum impervious coverage is a new requirement that is largely from paved vehicular areas, staff recommends a reduction in the required parking spaces for the above listed residential uses to none or to require nor more than one parking space per unit.

[6] 349b65_a87b031cfade4e0eae070dbba569981f.pdf (dallasclimateaction.com).
[7] Impervious Surfaces and Flooding | U.S. Geological Survey (usgs.gov)

6. Alley Setbacks for Enclosed Parking Spaces

Section 51A-4.301(a)(9) General provisions of off-street parking regulations requires that an enclosed parking space, like a garage, must be at least 20 feet from the right-of-way line adjacent to a street or alley if the space faces upon and can be entered directly from the street or alley. The original intent of this requirement was to provide an area for a vehicle to idle outside of travel lanes while a person manually lifts a garage door. However, since the invention of remote-controlled garage doors, the current rationale for keeping this provision is to allow adequate space for a vehicle to park outside of a garage door and not block a sidewalk.

While staff agrees that the 20-foot distance from an enclosed structure (garage) from a street is necessary so that a sidewalk or street is not blocked by a parked vehicle, safe and efficient use of an alley can be facilitated with an automatic garage door opener. The requirement for an automatic garage door opener if the garage is less than 20 feet from the alley is already required in Article XIII, Form Districts, Section 51A-13.304, (h) Manor House (6)(A)(ii) garage placement when alleys are provided for single-family, handicapped group dwelling unit, and duplex uses.

Therefore, if the 20-foot distance requirement for garages from an alley is eliminated, it would reduce the length of the driveway required and may encourage more vehicular access from an alley. Allowing or encouraging more vehicular alley access for lots that may have garages that are less than 20 feet will help the homeowners and builders to meet the impervious coverage limits in the front yard and provide more flexibility for larger porches or pedestrian paths that encourage use of front yards.

The reduction in impervious paving for vehicular driveway access and/or to a front entry garage will help the City meet the CECAP goal of reducing stormwater runoff that exacerbates flooding and help reduce the air temperatures from ambient heat that gets emitted from impervious paving. The reduction in the amount of paving could also help to lower the cost of development and make housing more affordable – a goal of the City Council.

Finally, eliminating the 20-foot setback for an enclosed parking space would not eliminate all setbacks for a structure. Structures must still comply with the setbacks of the zoning district for which they are located.

Staff Recommendations for Alley Setbacks for Enclosed Parking Spaces

Staff proposes eliminating the requirement that an enclosed parking space be placed 20 feet from the alley and instead requiring the use of an automatic garage door opener if the garage is less than 20 feet from the alley. Staff recommends no change to the 20

feet distance requirement from a street so that parked vehicles are less likely to overhang the sidewalk. However, staff recommends adding a special exception process through the board of adjustment to authorize a reduction to the setback required when a vehicle enters an enclosed parking space from a street.

Eliminating this distance requirement from garages to alleys will allow and encourage the use of vehicular alley access and shorten the length of driveways; thereby negating the need for vehicular front entry access and reducing impervious surfaces.

7. Adding Neighborhood Stabilization Overlay (NSO) Options

Section 51A-4.507 Neighborhood Stabilization Overlay regulates neighborhood-specific yard, lot, and space requirements of single family neighborhoods to help ensure compatibility of existing neighborhoods with respect to character, stability, and livability. The NSO is an overlay district that adds additional requirements to the base zoning district, such as R-7.5 (A) residential district that controls development on the residential lots within an existing neighborhood, as specified by a particular approved NSO ordinance. Those additional requirements per Sec. 51A-4.507 can include front yard setback, side yard setback, garage location, placement, and connection, and height as outlined in that section. Per Sec. 51A-4.507 (e)(2) Neighborhood stabilization overlay, only the range of the front yard setback of the underlying or base zoning may be considered in the NSO and may be greater or lesser than the front yard setback of the underlying zoning district. This range must be within the distance of the required underlying zoning district and the median of the existing single family structures within that blockface[8].

At least one of the comparison cities, Lancaster, allows additional requirements for special districts, such as their Neighborhood Preservation Overlay, similar to a Dallas NSO to include lot coverage, driveway, curbs and sidewalks, garage entrance location, and landscaping as well as lot size and front yard and side yards.

While our impervious coverage limitation of 40 percent for front yards as prescribed in this code amendment would apply to single family residential zoning districts, a particular neighborhood with an NSO may find it necessary or desirable to have a lesser or greater percentage. Since the additional requirements for front yard setbacks for NSO's only includes allowing a lesser or greater range of front yard setback, it will be necessary to include an amendment to Sec. 51A-4.507 (e)(2) to include a lesser or greater percentage of impervious coverage. This may be particularly important if the range of the front yard setback is modified through the NSO as well.

[8] SEC. 51A-4.507. NEIGHBORHOOD STABILIZATION OVERLAY. (amlegal.com)

Staff Recommendations for Adding Neighborhood Stabilization Overlay Options

Staff recommends adding language to Section 51A-4.507(e)(2) Neighborhood stabilization overlay, front yard setback to allow a neighborhood to consider if a lesser or greater percentage of impervious coverage within the front yard setback is right for their neighborhood. Since this is a new concept, no existing NSOs would be made nonconforming.

8. Landscaping Requirements

Since soil conditions and permeability is critical to healthy landscapes, some amendments to update related conditions are being considered with this code amendment.

Natural grass, ground cover, and other plant materials are organic surfaces that allow natural percolation or infiltration of rainfall and surface runoff while synthetic turf and permeable pavement in most applications do not allow a natural infiltration rate of rainfall or runoff due to soil compaction[9].

Soil compaction is the artificial and mechanical process of decreasing the volume of the soil rapidly by the expulsion of air voids in the soil resulting in the increase in density, thereby reducing the rate of water movement through the soil to increase the strength of the soil for development. Soil compaction is to the detriment of vegetation and living organisms.

Section 51A-10.125 Mandatory Landscaping Requirements of Article X, Landscape and Tree Preservation Regulations provides that a minimum number of trees are required on a residential lot as determined by the lot size. There are currently three categories of lot size ranges that require a minimum number of trees for single family and duplex uses in the front yard. Lots ranging from 4,000 square feet or less are required to provide one large or medium nursery stock tree in the front yard. Lots between 4,000 square feet and 7,499 square feet in area require a minimum of two large or medium nursery stock trees per lot with a minimum of one nursery stock tree located in the front yard. The third lot size range is the largest category that requires lots 7,500 square feet and greater to provide a minimum of three large or medium nursery stock trees per lot with a minimum of two nursery stock trees in the front yard. This is a very broad lot size range and does not take into account additional landscaping for large lots over one acre in size.

[9] Compaction of Soil: Definition, Principle and Effect | Soil Engineering (soilmanagementindia.com)

Article X also specifies that permeable pavement does not count as landscape area for shared access developments. There are currently no such restrictions for single family or duplex uses.

A few of the comparison and index cities specify that landscaping for residential districts or any districts must be living plant material or specifically state that artificial turf is not allowed in required landscape areas. Fort Worth requires that all yards for two-detached dwelling units on one lot shall be planted in ground cover except for those areas occupied by building, driveways, sidewalks, flower beds, tree wells, and other landscaped areas. Fort Worth also requires that yards of multifamily districts where adjacent to residential districts not be graveled or hard-surfaced, but shall be maintained as open green space, save and except for necessary driveways. University Park requires a landscape area of at least 125 square feet to be created by locating the inside curve of the driveway at least 7.5' from the back of sidewalk for circular driveways with two approaches on the same street or circular driveways on corner lots. Arlington requires one of two landscaping options for front yards of single family detached and single family attached development. The required front yard must be either at least 15 percent vegetative cover for single family detached and at least 30 percent vegetative cover for duplex or townhouse or the front yard must provide at least ten shrubs of at least two different species and one tree for single family detached and at least six shrubs and one tree for single family attached. Lancaster also has general design guidelines for landscaping compatibility with the surrounding landscapes and structures in character and appearance for historic districts. San Francisco requires an additional 20 percent of the required front yard area that is required to be pervious to be unpaved and devoted to landscape.

The use of natural grass, ground cover, and other plant materials are organic surfaces that allow natural percolation or infiltration of rainfall and surface runoff while synthetic turf, and permeable pavement in most applications do not allow a natural infiltration rate of rainfall or runoff due to soil compaction[10].

To address the natural permeability or infiltration of rainfall runoff, snow or ice melt runoff, or surface runoff and drainage, staff also proposes amendments to the landscaping requirements for residential districts.

Staff Recommendations for Landscaping Requirements

Staff recommends amendments to the landscaping requirements for residential districts to address what can be allowed within the area that will be limited by an impervious coverage percentage. The remaining percentage will now only be allowed to be covered with pervious surfaces for the purpose of landscaping or the growth and establishment of

[10] Compaction of Soil: Definition, Principle and Effect | Soil Engineering (soilmanagementindia.com).

trees and other vegetation. Permeable paving and artificial turf will not be allowed within required landscape areas. Tree requirements for lots greater than one acre will be added to address the missing category in the landscaping requirements for these larger residential lots.

Additional updates to terminology and improvements for implementation of landscaping regulations are also recommended.

These amendments will help to reduce the stormwater runoff that exacerbates flooding and lower the air temperature from the heat island effect. The additional tree requirements will also help to increase the tree canopy coverage in both the private and public realm to implement recommendations to increase the tree canopy from the Urban Forest MasterPlan – a stated goal of CECAP.

SUMMARY OF STAFF RECOMMENDATIONS:

The purpose of the impervious coverage requirement is to allow the natural infiltration of water from rainfall, runoff, and stormwater drainage to reduce flooding and heat associated with impervious and hardscape surfaces, while promoting compatibility of existing neighborhood front yards, and to reduce soil runoff from erosion while providing shade, cleaning of the air, beauty, and tranquility that landscaping and trees provide to our natural environment.

Based on other cities researched, input from internal departments, and preliminary drawing samples provided by PUD staff that demonstrate the desired percentage of reduction of impervious surface to help reduce stormwater runoff, and the heat island effect, staff recommends the following amendments.

1. <u>Definition</u>

    - IMPERVIOUS COVERAGE means any surface that prevents or substantially impedes the natural infiltration of stormwater into the ground, and includes, but is not limited to hardscape surfaces such as asphalt, concrete, wood, crushed granite, pavers, synthetic turf, compacted soil or rock, and similar surfaces. Linear borders such as landscape barriers, retaining walls, and fences are excluded in these calculations.

2. <u>Applying Maximum Impervious Coverage to Residential Front Yards</u>

    - Add a standard for impervious coverage of front yards for residential districts

3. Impervious Coverage Maximum

    - Establish a lower base maximum percentage without additional design standards, includes non-residential uses that are allowed in residential districts: church, school, and public service.

4. Incentivizing Design Standards

    - Incentivize desired design standards with additional impervious coverage allowances with administrative review and special exception options.

5. Reduced Parking Requirements

    - None or one space per dwelling unit or unit of measure

6. Alley Setback for Enclosed Parking Spaces

    - Eliminate 20-foot garage door setback from alley (still applicable to streets)
    - Add a special exception option for the board of adjustments to reduce garage door setback for streets

7. Adding Neighborhood Stabilization Overlay (NSO) Options

    - Add impervious coverage as an option to be regulated more or less strictly within Neighborhood Stabilization Overlays

8. Landscaping Requirements

    - Clarify that permeable paving and synthetic turf not allowed within required landscaping area in front yard.
    - Add minimum number of trees required based on lot size for lots over one acre
    - Update with additional clarifications

Complete Steets Vision Map

Legend

Street Typology

- Commercial
- Industrial
- Mixed Use
- Parkway
- Residential

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Street Typology

Maximum Impervious Area City Comparisons
Table 1 of 5

	DALLAS			ADDISON			ATLANTA			AUSTIN			BALTIMORE			
Maximum Impervious Coverage for Residential	Proposed			Y			Y			Y			Y			
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)-FY	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) - FY	Max. Imper-vious Area (%) – RY	District
	10%	30%[1]	A (A)	N/A	60	R-1	N/A	N/A	N/A	N/A	65%	Lots < 4,000 SF (Cottage and Urban Home - Small Lot Amnesty)	25%	40%	N/A	R-1A-R-1E (Larger Lots)
	40%	40%[1]	R-ac(A) R-1/2ac (A) R-16(A)	40%	60%	R-1 R-2	N/A	N/A	N/A	N/A	40%	All other Resid. Districts	30%	50%	N/A	R-1, R-2
				65%	80%	R-3										
	45%	40%[1]	R-13(A) R-10(A) R-7.5(A) R-5(A)	60%	70	R-4(SF-D)	N/A	N/A	N/A	N/A	N/A	N/A	35%	50%	N/A	R-3, R-4
	60%	40%[1]	TH-1(A)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	R-5 through R-10 (Rowhouse)			
	60%	40%[1]	TH-2(A)	60%	90	R-4 (SF-A)	N/A	N/A	N/A	N/A	N/A	N/A	40%	45%	65%	R-5
	60%	40%[1]	TH-3(A), D(A), MF-1(A)(SAH)-MF-	60%	70	R-4 (D,Tri-plex, Fourplex, MF)	N/A	55%	Per Storm water permit	MF	N/A	N/A	40%	50%	65%	R-7

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 1 of 5

	DALLAS			ADDISON			ATLANTA			AUSTIN			BALTIMORE			
Maximum Impervious Coverage for Residential	Proposed			Y			Y			Y			Y			
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)-FY	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) - FY	Max. Imper-vious Area (%) – RY	District
			3(A)(SAH)													
	60%	40%[1]	CH(A)	60%	70	R-5	N/A	N/A	N/A	N/A	N/A	N/A	40%	60% (Lots >/= 80' depth; other-wise 80%	65%	R-8
	20%	30%	MH(A)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35%	60%	N/A	R-9 SF-D or SF-Semi-detached
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40%	N/A	65%	Row-house
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40%	N/A	N/A	MF
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40%	N/A	N/A	All other
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35%	60%	N/A	R-10 SF-D or SF-Semi-detached
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80%	N/A	65%	Row-house

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 1 of 5

	DALLAS			ADDISON			ATLANTA			AUSTIN			BALTIMORE			
Maximum Impervious Coverage for Residential	Proposed			Y			Y			Y			Y			
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)-FY	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) - FY	Max. Imper-vious Area (%) – RY	District
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80%	N/A	N/A	MF
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70%	N/A	N/A	All other
	N/A	N/A	N/A	80%	90%	M-1 (Mixed-Use Neigh.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	60%	70%	M-1 (Mixed-use MF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	60%	75%	M-2 (Mixed-Use Suburban)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	60%	75%	M-3 (Mixed-Use Urban Corridor)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	90%	100%	M-4(Mixed-Use Center)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	90%	100%	M-5 (Mixed-Use Regional)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 2 of 5

	DALLAS			BOSTON			COLLEGE STATION			DUNCANVILLE			FRISCO		
Maximum Impervious Coverage for Residential	Proposed			Y			Y			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-**FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**-FY**	District	Max. Lot Cover-age (%)-**FY**	Max. Imper-vious Area (%)-**FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**-FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **-FY (Front Loaded only)**	District
	10%	30%[1]	A (A)	Groundwater-retaining paving required system that will promote infiltration of rainfall to groundwater capture of a volume of </= 1.0 across that portion of surface area of lot to be paved		Groundwater Conserv-ation Overlay District; Greenbelt Protection Overlay District	N/A	30%	R,WE, E (N)(P)	20%	N/A	SF-43	N/A	50%	AG
	40%	40%[1]	R-ac(A) R-1/2ac (A) R-16(A)				N/A	40%	WRS	50%	N/A	SF-13 SF-10	20%	50%	RE
	45%	40%[1]	R-13(A) R-10(A) R-7.5(A) R-5(A)				N/A	50%	RS(J)	50%	N/A	SF-7	30%	50%	SF-16
	60%	40%[1]	TH-1(A)	N/A	N/A	N/A	N/A	55%	GS (J)(P)	50%	N/A	TF-7 (Townhouse)	40%	50%	SF-12.5
	60%	40%[1]	TH-2(A)	N/A	N/A	N/A	N/A	75%	T	50%	N/A	TF-7 (Townhouse)	45%	50%	SF-10 SF-8.5 SF-7
	60%	40%[1]	TH-3(A), D(A),	N/A	N/A	N/A	N/A	65%	D	50%	N/A	TF-7 (D) MF-14 MF-21	55%	50%	D MF OTR

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 2 of 5

	DALLAS			BOSTON			COLLEGE STATION			DUNCANVILLE			FRISCO		
Maximum Impervious Coverage for Residential	Proposed			Y			Y			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-**FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**-FY**	District	Max. Lot Cover-age (%)-**FY**	Max. Imper-vious Area (%)-**FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**-FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**-FY (Front Loaded only)**	District
			MF-1(A)(SAH)-MF-3(A)(SAH)	N/A	N/A	N/A	N/A	Per engineer drainage analysis	MF MU						(Original Town Resid.) PH
	20%	30%[1]	MH(A)	N/A	N/A	N/A	N/A	N/A	MHP	N/A	N/A	N/A	N/A	50%	MH
	60%	40%[1]	CH(A)	N/A	N/A	N/A	Clustered Residential Districts			N/A	N/A	N/A	65%	50%	TH
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30%	R,WE,E (N)(P)	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30%	WRS	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40%	RS(J)	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50%	GS (J)(P)	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55%	T	N/A	N/A	N/A	N/A	N/A	N/A

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 3 of 5

	DALLAS			FT. WORTH			HOUSTON			MINNEAPOLIS			RICHARDSON		
Maximum Impervious Coverage for Residential	Proposed			Y			Y			N			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY (Driveway Cover-Age, including parking pads)**	District	Max. Lot Cove r-age (%)- **FY**	Max. Imperviou s Area (%)- **FY**	District	Max. Lot Cove r-age (%)	Max. Imper-vious Area (%)**- FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **-FY (Front Loaded only)**	District
	10%	30%[1]	A (A)	N/A	50% 65%-Circular Driveway (one-family dwellings)	AG AR	N/A	Drainage Rate Charges per imper-vious areas	All	45%	60%	Parks	N/A	N/A	N/A
	40%	40%[1]	R-ac(A) R-1/2ac (A) R-16(A)	20%	50% 65%-Circular Driveway	A-2.5A A-43	N/A	N/A	N/A	45%	60%	Interior 1 Interior 2	50% Lot Cov – the cumulative area of any driveway plus any located btw the front property line and any front building wall		R-2000-M R-1800-M
	45%	40%[1]	R-13(A) R-10(A) R-7.5(A) R-5(A)	30%	50% 65%-Circular Driveway	A-43 A-21	N/A	N/A	N/A	60%	75%	Interior 3 Corridor 3			R-1500-M R-1250-M R-1100-M R-1000-M R-950-M R-850-M
	60%	40%[1]	TH-1(A)	40%	50% 65%-Circular Driveway	A-10	N/A	N/A	N/A	70%	85%	Corridor 4 Corridor 6	N/A	N/A	RA-1100-M

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 3 of 5

	DALLAS			FT. WORTH			HOUSTON			MINNEAPOLIS			RICHARDSON		
Maximum Impervious Coverage for Residential	Proposed			Y			Y			N			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY (Driveway Cover-Age, including parking pads)**	District	Max. Lot Cover-age (%)- **FY**	Max. Imperviou s Area (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **-FY (Front Loaded only)**	District
	60%	40%[1]	TH-2(A)	45%	50% 65%-Circular Driveway	A-7.5		No parking or driveways Within the building line	Walk-able Places TOD	80%	90%	Transit 10 Transit 15 Transit 20 Transit 30	N/A	N/A	N/A
	60%	40%[1]	TH-3(A), D(A), MF-1(A)(SAH)-MF-3(A)(SAH)	50%	50% 65%-Circular Driveway	A-5 B (Two-family) MF (Adjacent to Resid.)	N/A	N/A	N/A	N/A	100%	Core 50 Productio n	50% Lot Cov – the cumulative area of any driveway plus any located btw the front property line and any front building wall		D-1400-M D-2400-M D-300-M
	20%	30%[1]	MH(A)	N/A	50% 65%-Circular Driveway	MH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	60%	40%[1]	CH(A)	N/A	No Front entry driveway or parking	R-1 (Det. Zero Lot Line)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	50% 65%-Circular	R-1 (Attache	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 3 of 5

	DALLAS			FT. WORTH			HOUSTON			MINNEAPOLIS			RICHARDSON		
Maximum Impervious Coverage for Residential	Proposed			Y			Y			N			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY (Driveway Cover-Age, including parking pads)**	District	Max. Lot Cover-age (%)- **FY**	Max. Imperviou s Area (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **-FY (Front Loaded only)**	District
					Driveway	d ZLA)									
	N/A	N/A	N/A	N/A	50% 65%-Circular Driveway	R-1 (Cluster)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	50% 65%-Circular Driveway	R-2(TH-Cluster)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 4 of 5

	DALLAS			ROCKVILLE			SAN ANTONIO			SAN DIEGO			SAN FRANCISCO		
Maximum Impervious Coverage for Residential	Proposed			Y			N			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-FY	District	Max. Lot Cover age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY (driveway, parking, sidewalk)	District	Max. Lot Cove r-age (%)	Max. Imper-vious Area (%) -FY	District
	10%	30%[1]	A (A)	15%	10%	R-400	N/A	N/A	RP	10%	N/A	AG-1-1 AR-1-1	N/A	N/A	N/A
	40%	40%[1]	R-ac(A) R-1/2ac(A) R-16(A)	25%	20%	R-200	N/A	N/A	RE R-20	20%	N/A	AG-1-2 AR-1-2	N/A	N/A	N/A
	45%	40%[1]	R-13(A) R-10(A) R-7.5(A) R-5(A)	25%	25%	R-150	N/A	N/A	R6 R5 R-4	N/A	60%	RE-1-1 RE-1-2 RE-1-3	Min. OS Area	50%, plus 20% un-paved and de-voted to land-scape	RH-1(D) Detached RH-1 (One-Family) RH-1(S) One-Family with Minor Detached) RH-2 (Two Family) RH-3 (Three-Family)
				25%	30%	R-90	70%	N/A	R-3	N/A	60%	RS-1-1 RS-1-2 RS-1-3			
				35%	40%	R-75 R-60 R-60 (5,000 sf)	50%	N/A	R-2	N/A	60%	RS-1-4 RS-1-5 RS-1-6 RS-1-7			
				1,500 Sf	40%	Lincoln Park Conserv-ation	45%	N/A	R-1	N/A	N/A	RX-1-1 RX-1-2			
				40%	45%	R-40	N/A	N/A	RM-6 RM-5 RM-4	N/A	N/A	N/A			
	60%	40%[1]	TH-1(A)	Min. OS	N/A	RMD-I (Infill)				N/A	N/A	RT-1-1			RM-1 (Resid. Mixed) – Low

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 4 of 5

	DALLAS			ROCKVILLE			SAN ANTONIO			SAN DIEGO			SAN FRANCISCO		
Maximum Impervious Coverage for Residential	Proposed			Y			N			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-FY	District	Max. Lot Cover age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY (driveway, parking, sidewalk)	District	Max. Lot Cove r-age (%)	Max. Imper-vious Area (%) -FY	District
				Area		RMD-10, 15, 25									Density RM-2 -Mod.
	60%	40%[1]	TH-2(A)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RT-1-2			
	60%	40%[1]	TH-3(A), D(A), MF-1(A)(SAH)-MF-3(A)(SAH)	N/A	N/A	N/A	Min. OS Area	N/A	MF-18 MF-25 MF-33 MF-40 MF-50 MF-65	Min. OS Area	N/A	RT-1-3-5 RM-1-1-3 RM-2-4-6 RM-3-7-9 RM-4-10-12-			RM-3 – Med RM-4 - High
	60%	40%[1]	CH(A)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Min. Use-able OS	N/A	RC (Resid. Commercial)
	20%	30%[1]	MH(A)	N/A	N/A	N/A	N/A	N/A	MH MHC MHP	N/A	60% (RS)	Mobilehom e Park Overlay Zone (RM, RX, and RS zones)	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50%, plus 20% unpaved and de-	RTO (Resid. Transit-Oriented)

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 4 of 5

	DALLAS			ROCKVILLE			SAN ANTONIO			SAN DIEGO			SAN FRANCISCO		
Maximum Impervious Coverage for Residential	Proposed			Y			N			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)-FY	District	Max. Lot Cover age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)-FY (driveway, parking, sidewalk)	District	Max. Lot Cove r-age (%)	Max. Imper-vious Area (%) -FY	District
														voted to land-scape	

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 5 of 5

	DALLAS			SAN JOSE			SEATTLE			UNIVERSITY PARK			GEORGETOWN		
Maximum Impervious Coverage for Residential	Proposed			Y			N			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)- **FY**	District	Max. Lot Cover-age (%)/ FAR (deci-mal)	Max. Imper-vious Area (%)**- FY** (lots >/= 40' wide, including pervious sur-faces)	District	Max. Lot Cover-age (%)- **FY**	Max. Imper-vious Area (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **- FY**	District
	10%	30%[1]	A (A)	.80	N/A	OS A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20%	AG
	40%	40%[1]	R-ac(A) R-1/2ac (A) R-16(A)	N/A	50% (Paving in Front setback area limited to the greater of 10' in width or 50% of the width of the lot for lots <40' in width) Exception: If paved area is contiguous and provides primary access to 2 required side-by-side parking spaces may exceed 50%	R-1-RR R-1-1 R-1-2	City-wide Drainage Rate Charge based on parcel's run-off estimate, including amt. of pervious and impervious surface		All	N/A	3,600 sf	SF-1 to SF-4 (0-6,000 SF).	N/A	40%	RE
										N/A	60%	6,001-7,500			
										N/A	52% or 4,500 sf (greater of)	7,501-10,000			
										N/A	48% or 5,200 sf (greater of)	10,001-12,000			
										N/A	40% or 5,760 sf (greater of)	12,001-35,000			
										N/A	35% or 4,500 sf (greater of)	35,001 or more			

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 5 of 5

	DALLAS			SAN JOSE			SEATTLE			UNIVERSITY PARK			GEORGETOWN		
Maximum Impervious Coverage for Residential	Proposed			Y			N			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)- **FY**	District	Max. Lot Cover-age (%)/ FAR (deci-mal)	Max. Imper-vious Area (%)**- FY** (lots >/= 40' wide, including pervious sur-faces)	District	Max. Lot Cover-age (%)- **FY**	Max. Imper-vious Area (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **- FY**	District
					if no more than 25' long and 18' wide										
	45%	40%[1]	R-13(A) R-10(A) R-7.5(A) R-5(A)	N/A	50% (Paving in Front setback area limited to the greater of 10' in width or 50% of the width of the lot for lots <40' in width) Exception also (same as above)	R-1-5 R-1-8				N/A	N/A	N/A	N/A	45%	RL RS
	60%	40%[1]	TH-1(A)	N/A	N/A	R-2 RM				N/A	N/A	N/A	N/A	N/A	N/A
	60%	40%[1]	TH-2(A)							N/A	N/A	N/A	N/A	N/A	N/A
	60%	40%[1]	TH-3(A), D(A), MF-							N/A	63%	SF-A, D-1 D-2, MF-1, MF-2, MF-3 (all lot	N/A	45%	TF (Two-Family)

[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

Maximum Impervious Area City Comparisons
Table 5 of 5

	DALLAS			SAN JOSE			SEATTLE			UNIVERSITY PARK			GEORGETOWN		
Maximum Impervious Coverage for Residential	Proposed			Y			N			Y			Y		
Maximum Lot Coverage/ Maximum Impervious Coverage of Front Yard or Cover Percentages (by zoning district)	Max. Lot Cover-age (%)	Max. Imper-vious Coverage (%)- **FY**	District	Max. Lot Cover-age (%)/ FAR (deci-mal)	Max. Imper-vious Area (%)**- FY** (lots >/= 40' wide, including pervious sur-faces)	District	Max. Lot Cover-age (%)- **FY**	Max. Imper-vious Area (%)- **FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%)**- FY**	District	Max. Lot Cover-age (%)	Max. Imper-vious Area (%) **- FY**	District
			1(A)(SAH)-MF-3(A)(SAH)									sizes)	N/A	50%	MF-1 MF-2
	60%	40%[1]	CH(A)	N/A	N/A	N/A				N/A	N/A	N/A	N/A	N/A	N/A
	20%	30%[1]	MH(A)	N/A	N/A	R-MH				N/A	N/A	N/A	N/A	50%	MH

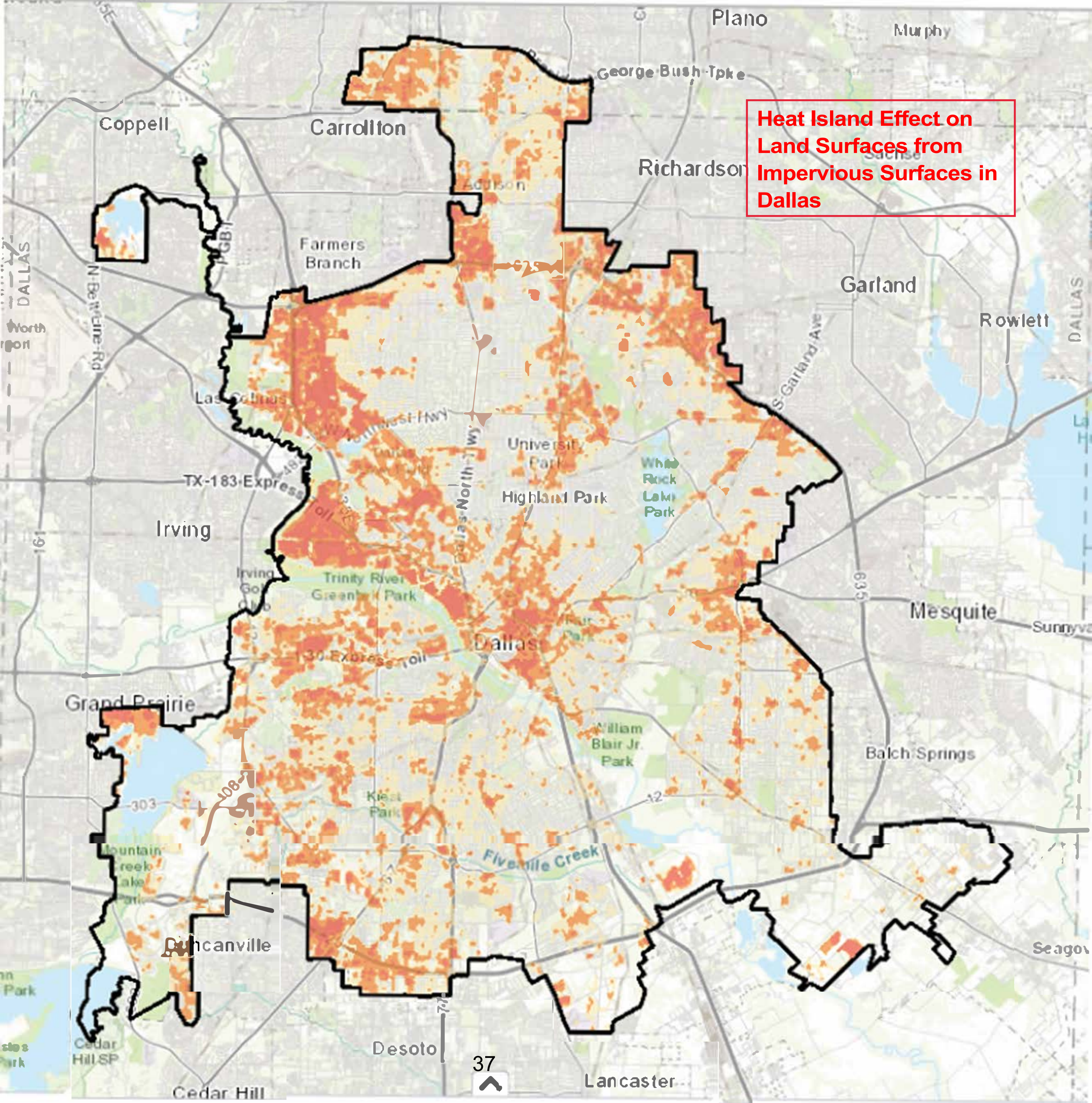
[1]Additional 10% of impervious area may be granted with conditions (See 51A-XX of the Dallas Development Code)

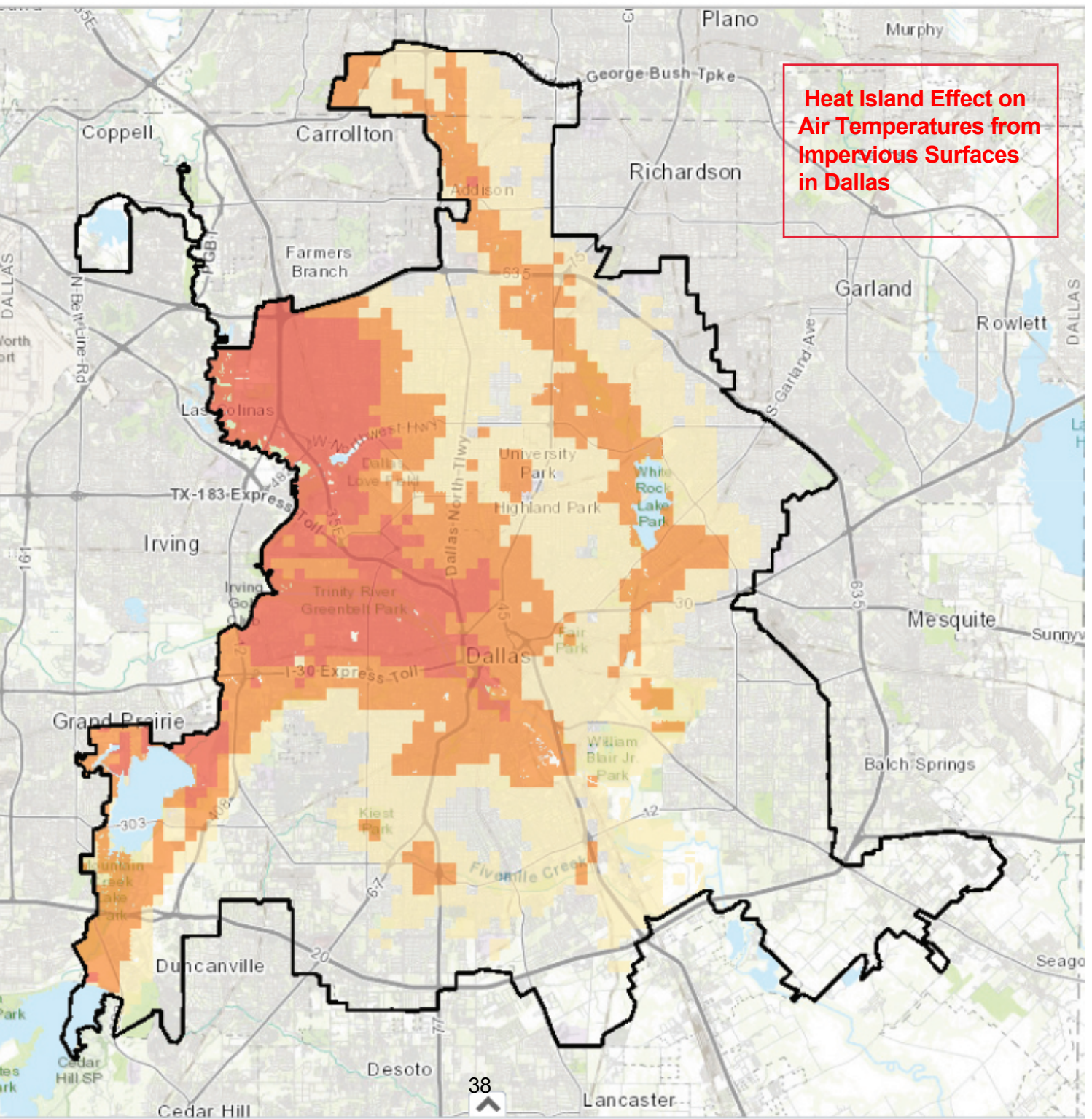
APPENDIX

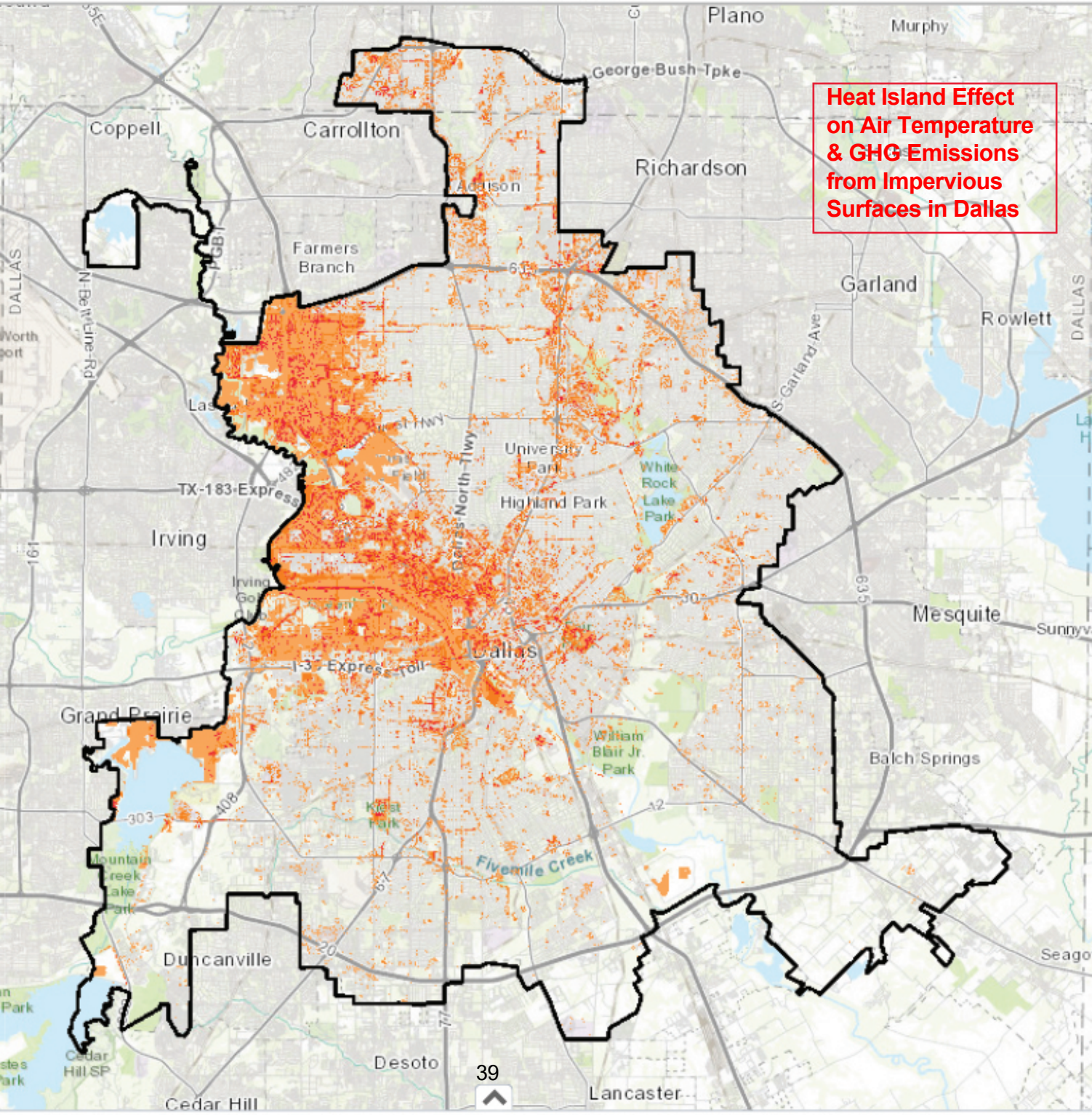
Other Sources for Impervious Surfaces:

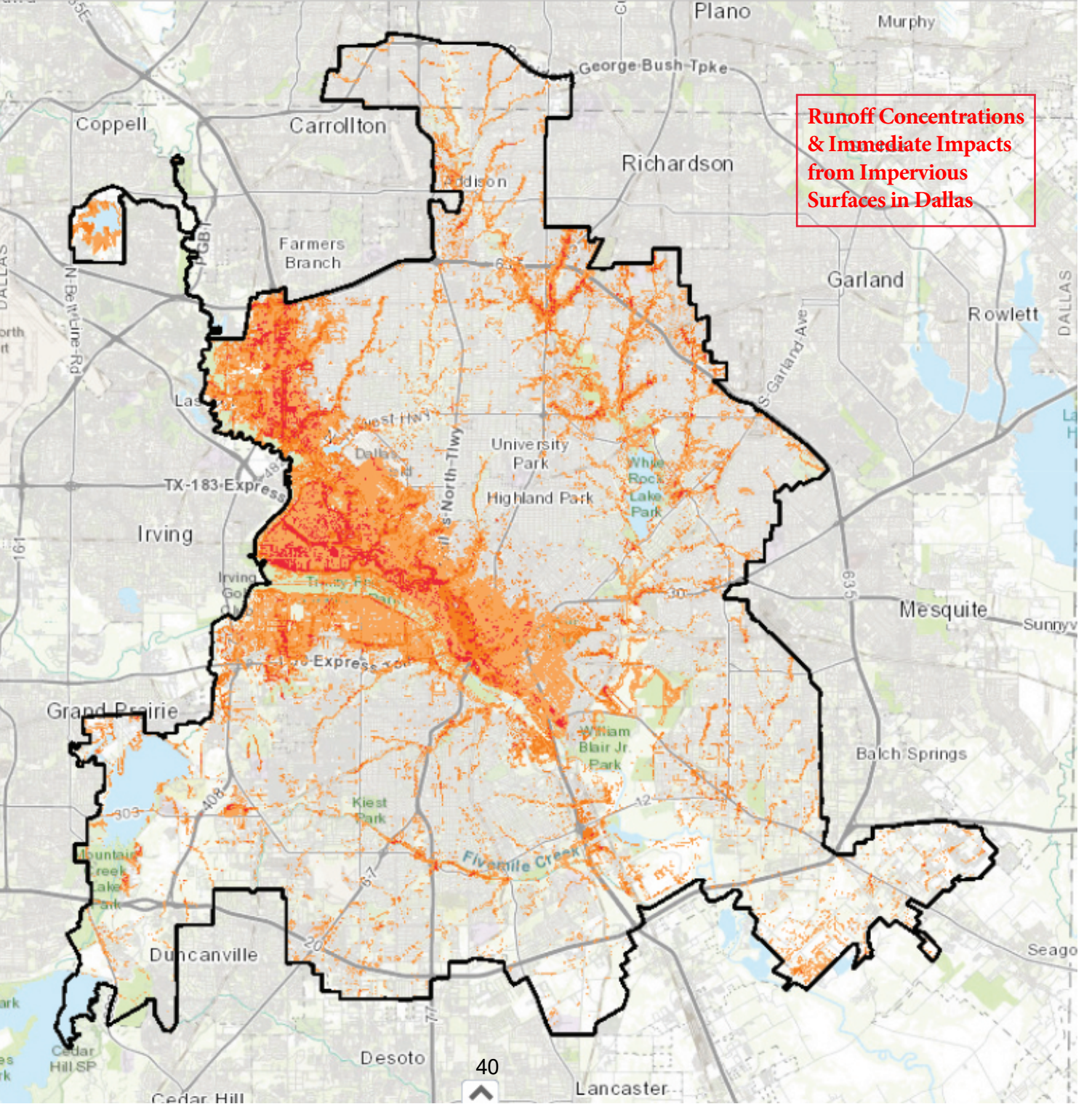
Dashboard | Dallas Climate (dallasclimateaction.com)
Equity Division Racial Equity Plan (dallascityhall.com)
Impervious Surfaces and Flooding | U.S. Geological Survey (usgs.gov)
Calculation-of-Impervious-Surfaces.pdf (nola.gov)

Heat Island Effect on Land Surfaces from Impervious Surfaces in Dallas




Heat Island Effect on Air Temperatures from Impervious Surfaces in Dallas
Plano
Murphy
George Bush Tpke
Coppell
Carrollton
Richardson
Addison
Farmers Branch
Garland
Rowlett
S Garland Ave
N Beltline Rd
Las Colinas
TX-183 Express Toll
Irving
University Park
Highland Park
White Rock Lake Park
Dallas North Tlwy
Trinity River Greenbelt Park
Irving Golf Club
Fair Park
Dallas
I-30 Express Toll
Mesquite
Grand Prairie
William Blair Jr. Park
Balch Springs
Kiest Park
Five Mile Creek
Duncanville
Cedar Hill SP
Desoto
Cedar Hill
Lancaster


Heat Island Effect on Air Temperature & GHG Emissions from Impervious Surfaces in Dallas
Plano
Murphy
George Bush Tpke
Coppell
Carrollton
Richardson
Addison
Farmers Branch
Garland
Rowlett
S Garland Ave
DALLAS
N Beltline Rd
TX-183 Express
Irving
University Park
Highland Park
White Rock Lake Park
Dallas North Tlwy
Mesquite
Sunnyv
Dallas
I-30 Express Toll
Grand Prairie
William Blair Jr. Park
Balch Springs
Kiest Park
Fivemile Creek
Mountain Creek Lake Park
Duncanville
Seago
Cedar Hill SP
Desoto
Lancaster
Cedar Hill


Runoff Concentrations & Immediate Impacts from Impervious Surfaces in Dallas
Plano
Murphy
George Bush Tpke
Coppell
Carrollton
Richardson
Addison
Farmers Branch
Garland
Rowlett
DALLAS
N Beltline Rd
S Garland Ave
Las
University Park
Highland Park
White Rock Lake Park
TX-183 Express
Irving
Mesquite
Sunnyv
Grand Prairie
William Blair Jr. Park
Balch Springs
Kiest Park
Fivemile Creek
Duncanville
Seago
Cedar Hill SP
Desoto
Lancaster
Cedar Hill