



October 28, 2021

Dear Portland Bureau of Transportation,

Families for Climate is a non-profit that “mobilizes parents, kids, and families to take action for climate justice and a livable planet. We build collective power, knowledge and hope as we unite towards a vibrant future for all.” We are very happy for the opportunity to provide input on the public draft of the 2021 Pedestrian Design Guide (PDG).

Children growing up in today’s Portland experience a legacy of accumulated design decisions, policies, and infrastructure investments that have been put into place during the last 100 years. Some children enjoy cool, walkable neighborhoods and others make do with urban heat islands lacking space for trees and poor connection to the rest of the city. Families for Climate believes that a strong 2021 PDG update will usher in an important era of active transportation where the quality of our public right-of-ways plays a crucial role in our health as we grow our protective tree canopy and add density to residential areas.

A lot has changed since the 1998 PDG was published. We have a new awareness of just how vital pedestrian design is for climate mitigation, adaptation, resiliency, and climate justice. This has been well-articulated in multiple plans, adopted by the City, providing important context for how pedestrian infrastructure and right-of-way tree canopy support the vision and values we share for growing healthy communities. Just as inter-bureau coordination is essential in building complete right-of-way (ROW) corridors, Families for Climate encourages PBOT to better integrate the PDG with the plans and goals already established by Urban Forestry, the Bureau of Planning and Sustainability, and the Bureau of Environmental Services.

1. **Because PBOT is doing the essential work of creating healthy, well-connected neighborhoods, we encourage authors to zoom out and open this guide with an inspiring vision rather than a laundry list of the functions and components of the ROW.** Consider adding the following paragraph to A.1. “Purpose of the Portland Pedestrian Design Guide:”

“From residential streets, to business districts and industrial corridors, the public right-of-way is an important community asset that has potential to support the health & well-being of our residents, workers, and our ecosystem. A positive pedestrian experience invites Portlanders to walk or roll to nearby destinations/access transit, rather than drive or remain isolated. This document is meant to effectively balance the many components of the public right-of-way so that pedestrians of any age in all neighborhoods can safely get where they need to go as we prepare our City for a new climate reality.”
2. In addition to the list of relevant documents listed in section A.3, several important plans specifically call for “connected, equitable, active transportation infrastructure.” **We hope you will add the following plans to the list on page 6:**
 - a. [Portland’s 2015 Climate Action Plan](#) (pgs. 70-83), the subsequent [2016 Climate Action through Equity](#) project, and
 - b. [The 2012 Portland Plan’s Healthy Connected City Strategy](#) (pg. 73-93), an intensive community-driven project, which strives to deliver services equitably throughout our city.
 - c. [The 2004 Urban Forest Management Plan](#), seven years overdue for an update.
 - d. [Portland’s 2018 Citywide Tree Planting Strategy](#)

3. **PBOT's design guidelines have a specific role to play in preventing heat-related deaths.** As we learned in the June 2021 heat dome tragedy where 60 Portland residents perished, concrete and asphalt left unshaded by tree canopy causes urban heat islands, and also exacerbates peak electricity demand for cooling. Therefore, street trees are an essential component of all street classifications. On pages 8-9, in Table B-1: Street Design Classifications and Pedestrian Character we would like you to specifically call out "tree canopy or street trees" under Pedestrian Character and Function in several places:
 - a. Civic & Neighborhood Mainstreet descriptions: "Accommodate place-making functions, like street cafes, sidewalk vendors, **tree canopy**, vegetation, among other elements"
 - b. Industrial roads, Civic, Regional, and Community Corridor descriptions: "**Use design elements, such as street trees**, to provide a buffer between pedestrians and higher-speed and volume vehicle roadways"
 - c. Neighborhood Corridor: Add "**Include street trees to soften hardscape and improve ecological function**"
 - d. Local Streets: Add "**Design must allow sufficient space for large-form street trees wherever possible.**"

4. **To cool our city, we need to guarantee sufficient space to grow a healthy tree canopy.** Older neighborhoods were designed with generous furnishing zones to accommodate the original air conditioners: large trees with spreading crown. After electric air conditioning became more available in the 1950's, furnishing zone widths gradually diminished, leaving space for token trees (or none at all) that provide little cooling value. Neighborhoods where most sidewalk infrastructure is not yet built, such as outer SE & NE, tend to have lower income residents. If we do not designate sufficient space (>6 feet) for large trees in the ROW, these residents will forever live in heat islands.
 - a. Therefore, we are requesting the following adjustments to Table B-3 on page 15: For ROWs with minimum widths of 15 feet, please consider increasing the minimum furnishing zone width from four to 6 feet by reducing the width of the frontage zone to 0' in constrained situations. Benches/tables could be positioned between trees and this would allow Portland to grow the kind of overarching canopy necessary to improve comfort and function by slowing wind speeds, shading pedestrians, and improving aesthetics in densely-developed civic and neighborhood mainstreets.
 - b. Sidewalk widths could be reduced to five feet on industrial roads where there is minimal pedestrian traffic and a bike lane is present.
 - c. In newly-developed areas, please align furnishing zone widths with those specified in the City of Portland's Urban Forestry Street Tree Planting Lists. **In areas without overhead powerlines, furnishing zones should be 6-8.5' wide.** If this is not feasible, sidewalks should be curb tight with large-form street trees planted behind the sidewalk. **If there are high-voltage powerlines overhead, align with the City's Street Tree Planting Lists, leaving a 4-5.9' furnishing zone.**
 - d. B.1.3.d We applaud adding space to the furnishing zone when additional right-of-way is available behind the curb beyond the minimum dimensions required by Table B-3! We have not read TRN 1.22, but we would generally not want to see an existing 5' sidewalk expanded into a furnishing zone to meet the 6-ft requirement, as a 5-ft throughway is already ADA compliant.
 - e. B.5.3 Extending the Furnishing Zone into the Curb Zone: **We celebrate the inclusion of this section**, as it will make it possible to actually provide sufficient soil volume in the furnishing zone to plant large-form trees to shade our streets! This is widely employed in other cities around the world.
 - f. B.5.2 Curb-Tight Sidewalks do require street trees in most cases. The furnishing zone is behind the sidewalk, still in the ROW, and there are likely many such examples throughout Portland. It is a common method to minimize tree-sidewalk conflicts in areas where a 6' planting strip is not possible. **Please consult with Urban Forestry to revise the first two paragraphs of this section and add a diagram that positions the furnishing zone on the back-side of the sidewalk.** A one-foot-wide furnishing zone is unacceptable.

Mature red oak in a four-foot planting strip providing stormwater benefits (dry sidewalk) and heaving the sidewalk due to insufficient furnishing zone along an arterial.



Mature sweetgums in a 6.5 foot planting strip providing generous shade & stormwater benefits on a residential street near Knott & NE 29th.



5. **Families for Climate believes that tree preservation is essential to maintaining a healthy city.** Historically, PBOT has not been a strong advocate for tree preservation in the right-of-way. There are several best practices employed in other jurisdictions that could be used to protect mature trees when new sidewalk infrastructure is being planned. Inserting consistent language about the importance of tree preservation in the Pedestrian Design Guide will communicate to all engineers and inspectors that this is a priority for the Bureau.

- a. B.5. Please review PBOT's process in coordination with Urban Forestry to ensure that healthy, mature trees are automatically preserved. Consider studying whether the current Design Exception or a Public Works Alternative Review is resulting in retaining existing trees during development, or if a simpler process would be more effective. Tree preservation should be "business-as-usual" in Portland.
- b. We note that there is no mention of **alternative paving treatments for the purpose of tree preservation**. Rubber sidewalk pavers, bricks, and pervious concrete are several alternative surfaces that minimize tree-sidewalk space constraints, as described in this 2021 article by Portland's Urban Forestry Office.



Curb-tight sidewalk at NE 47th & Going preserving two mature conifers

- c. Please mention that there is an exception to the citywide minimum Pedestrian Through Zone width of 6 feet to preserve existing large trees by expressly adding the language in “bold” type as follows: B.1.3. “While the required widths in Table B-3 should be met in most situations, there are some situations where they will be unable to be met – either because of limited right-of-way, topography, or other site constraints, **such as mature tree preservation.**”
 - d. Section B.5.2 on page 36. Please insert the following language into paragraph 2: **“While curb-tight sidewalks are not preferable on high-volume streets, they are an important tool for preserving mature trees in the right-of-way in neighborhoods building out new sidewalk infrastructure.”**
 - e. Under “Circumstances Allowed” on page 37, adjust the 3rd bullet to read as follows: **“Along frontages where site conditions, such as topography, mature trees, or other constraints preclude constructing a full-width sidewalk.”**
 - f. Also on pg 37, consider adding the following bullet: **“Or other cases deemed necessary by the Urban Forester.”**
6. **Stormwater is an important outcome of PBOT’s work, even if it’s managed by a separate bureau.** B.2.3.a Tree Wells and Continuous Planting Strips.
- a. We request more accurate information in Table B-4. At first glance, this table communicates that PBOT is specifying tree wells in most circumstances, requiring a lengthy public works alternative process. Portland bureaus know that to improve stormwater infiltration, provide urban cooling, and grow healthy trees, continuous planting strips should be encouraged wherever practical. Tree wells have multiple drawbacks; they limit the potential size of trees planted, they are expensive to construct, and concrete is the most greenhouse gas-intensive material possible, so it should only be used when necessary. Since there are actually exceptions to most of the categories listed in Table B-4 it would be good to more accurately reflect this. For example, tree wells make sense along school & church frontages with loading zones where people congregate; a frontage with normal use should allow a planting strip. Please add x’s in the continuous planting strip column any place it says “depends on context:” industrial & employment zones, campus institution zones, multi-dwelling projects that are residential only, churches & schools. This will be easier for PBOT staff and design professionals to understand.
 - b. Pg. 21: “Exceptions to Table B-4 will be reviewed on a case-by-case basis in accordance with the following criteria/considerations.” Please add **“Other cases deemed necessary by the Urban Forester.”** Urban Forestry staff have the ability to survey the above & below ground space available to determine whether a tree well or continuous planting strip would accommodate the largest tree for the site.
 - c. Pg. 21: Under “Design Requirements for Continuous Planting Strips,” please remove the 50% hardscape loophole. Rewrite as follows: **“If desired, up to 50% of the surface area may be softscaped 3’ from the base of street trees using concrete, bricks, sand set pavers, depending on whether the location is commercial or residential.”** Design requirements for tree wells. Please include the following in the 2nd bullet at the bottom of page 21 (in bold face): Hardscape treatments within the furnishing zone may include pavers and should be placed on top of subgrade soil treatments that provide root expansion opportunities, **such as structural soil & Silva Cells.**
 - d. Please strike the following sentence from the top, right of page 21. “Maximum tree well length is 10 feet.” The bigger the better, as long as it works for the space.
7. **Families for Climate appreciates child-friendly design profiles.**
- a. If you’ve ever biked with a 4-yr-old, then you will know that designs like protected safer shoulders (B.5.4.e) that separate new bike riders, and kids on scooters from automotive traffic are not only more pleasant for everyone, but necessary to coax more families out of their cars!

- b. We are concerned that the following alternative pedestrian walkways are unsafe for children and adults with impairments: B.5.4.c Pedestrian Shared Street, on page 44, and B.5.4.d. Slow Safer Shoulder on page 45.
8. **Bicycle infrastructure is not an appropriate tradeoff for tree canopy (nor vice versa)**
- a. Figure B-20 should be relabeled as “Table B-6” because it serves a similar function as Table B-3.
 - b. Despite the artistic diagram, it is impossible to grow a tree in a sidewalk buffer furnishing zone of 1 foot. We believe that it is unacceptable for a city in a climate emergency to skip trees for bicycle facilities. To resolve this oversight, the street and sidewalk buffers may need to be combined, while removing the frontage allowance. The furnishing zone should be 4’ minimum at pinch points. We are concerned that the furnishing zone almost disappears completely at the bottom of Page 33. Pinch-points happen, but we cannot design an entire bike-ped corridor with no trees.
9. **Every step of the concrete manufacturing process has major climate impacts.** If the cement industry were a country, it would be the 3rd biggest CO2 polluter in the world, after the US and China. Given the heavy impact of concrete on atmospheric carbon, we believe it would be very beneficial to name “low-carbon concrete” and integrate the findings of Portland’s 2020 Low Carbon Concrete Sidewalk Pilot into the PDG and accompanying specification documents. According to the Paris Climate Agreement, the concrete industry needs to decrease emissions 16% by 2030 to keep the planet below 2C degrees of warming. While discussing materials in a design guide may seem unorthodox, including a mention of low carbon concrete is an important way that PBOT can do it’s part to educate everyone who has a hand in the design, development and construction of our pedestrian infrastructure.

In summary, we hope that you will:

- 1) Integrate this guide with other City of Portland plans.
- 2) Acknowledge that our city is experiencing a climate justice emergency with deadly consequences.
- 3) New gray infrastructure must be paired with -- and allow space for robust green infrastructure sufficient for cooling concrete & asphalt -- especially in the many lower-income parts of Portland where pedestrians are not equitably connected to safe active transportation infrastructure.
- 4) We know engineers like straight, clean lines, but preserving existing mature trees that have been cooling the right-of-way for decades is more effective than starting from scratch. So, don’t be afraid of innovation -- saving mature trees can save lives!

Please don’t hesitate to contact us if you have any questions.

Thank you,

Board of Directors
Families for Climate

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cc: City Commissioner Jo Ann Hardesty
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